

FEDERAL ITEM IDENTIFICATION GUIDE

RELAYS, ELECTROMAGNETIC; REED; AND RESONANT REED

The Reprint replaces FIIG A033, dated January 5, 2007.



Commander

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BY ORDER OF THE DIRECTOR

/s/

Commander

Defense Logistics Information Service

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GENERAL INFORMATION

1. Purpose and Scope

This Federal Item Identification Guide (FIIG) is a self-contained document for the collection, coding, transmittal, and retrieval of item characteristics and related supply management data for an item of supply for logistical use. This FIIG is to be used to describe items of supply identified by the index of approved item names appearing in this section.

2. Contents

This FIIG is comprised of the following:

- Index of Approved Item Names Covered by this FIIG
- Applicability Key Index
- Section I - Item Characteristics Data Requirements
- Section III - New text that should be here.
- Appendix A - Reply Tables
- Appendix B - Reference Drawing Groups (as applicable)
- Appendix C - Technical Data Tables (as applicable)

a. Index of Approved Item Names Covered by this FIIG:

The index lists the approved item names with definitions and item name codes as they appear in Cataloging Handbook H6, applicable to this FIIG. In addition, each name entry is assigned an applicability key for use in relating the characteristics requirements in Section I to the specific item name.

b. Applicability Key Index:

The purpose of this index is to provide the user with a ready reference for determining the specific requirements which are applicable to a given approved item name. This index lists all requirements in sequence as they appear in the FIIG. The applicability of a Master Requirement Coded requirement is indicated by the column headed by the specific item name applicability key as follows:

(1) The letter "X" indicates the requirement must be answered for a full descriptive item.

(2) The letters "AR" indicate the requirement is to be answered as required by (1) instructional notes within the FIIG; (2) when the reply is predicated on replies to a related main requirement; or (3) when an asterisk (*) is used in conjunction with the applicability key column in Section I.

(3) A blank in the column indicates the requirement is not applicable to the specific item name.

c. Section I - Item Characteristics Data Requirements:

This section contains the physical and performance characteristics requirements needed to describe and identify an item of supply. These characteristics differentiate one item from all other items of supply and are to be used to meet the needs of all supported functions. This section is arranged in columns. Identification of each column and instructions pertinent thereto are as follows:

(1) Applicability Key:

The first column shows the applicability key(s) for each requirement. It indicates whether the requirement need be satisfied for the item being identified. "ALL" indicates that the requirement must be answered for all items covered by the FIIG. One or more alphabetic character(s) or group of one or more alphabetic characters indicates a response is required when describing items with an approved item name or names represented by the key(s). An asterisk (*) used in conjunction with any applicability key indicates that the characteristic stated in the requirement may not be applicable to all items covered by the FIIG.

(2) Master Requirement Codes (MRC):

A four-position code which is assigned to a FIIG requirement for identification of the requirement, cross-referencing requirements in the various sections and appendices of the FIIG, and for mechanized processing and retrieval of FIIG generated data. Absence of a MRC for a requirement indicates a lead-in to requirements with individual MRCs in Appendix B.

(a) The coding technique for providing MULTIPLE/OPTIONAL responses will not be used for a Section I requirement assigned Mode Code A or L that leads to Appendix B sketches with dimensional requirements.

(b) Identified Secondary Address Coding:

This technique is for extending the Master Requirement Code so that a unique address is provided for each application of the requirement in relation to the item and is authorized only as instructed within the requirement. Responses coded through this technique will always consist of the following: (1) Master Requirement Codes, (2) indicator code (a single numeric character determined by the number of positions contained), (3) identified secondary address code (1 to 3-digit alphabetic codes determined by the number of predicted replies), (4) the mode code, (5) the reply code and/or clear text response, and (6) end with a record separator (*). Steps (1) through (6) are repeated for each application of the requirement.

(c) AND/OR coding:

A technique for extending the Master Requirement Code to provide a distinctive address for multiple responses to the same requirement. Responses coded through this technique will always consist of (1) Master Requirement Code, (2) mode code, (3) the response or reply code (as instructed by the requirement), (4) a single dollar sign (\$) for an OR condition, or a double dollar sign (\$\$) for an AND condition, (5) the mode code, (6) the response or reply code

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(followed by conditions (4) through (6) for each of the multiple responses) and (7) end with a record separator (*). NOTE: Apply this technique only when instructed by the requirement sample reply (e.g.).

(3) Mode Code:

A one-position alphabetic code that specifies the manner in which a response will be prepared. Each requirement assigned a MRC is also assigned a mode code. Sample replies follow each FIIG requirement displaying the proper construction of a response for the assigned mode code. The response to a requirement will always be prepared in accordance with the assigned mode code and sample reply except in the following instances:

(a) Use of E Mode Code replies is not authorized. If a reply needed to describe an item is not listed in the applicable table, contact the FIIG Initiator.

(b) Mode Code K may not be used for any requirement unless instructed by the requirement instructions.

(4) Requirement:

This portion includes the characteristics data elements and data use identifiers required to identify and differentiate one item of supply from another, narrative definitions, and explanations as to use and method of expression. Instructions for coding and preparing replies are also provided.

(5) Reply Code:

A code that represents an established authorized reply to a requirement.

d. Section III - Supplementary Technical and Supply Management Data:

This section includes those characteristics requirements necessary to support specific logistics functions other than National Stock Number assignment.

e. Appendix A - Reply Tables:

Tables of authorized replies to requirements and reply codes when the tables are too lengthy for inclusion in Section I/III, when applicable.

f. Appendix B - Reference Drawings:

This appendix contains representative illustrations which portray specific variations of one or more generic characteristics. If reference drawings contain requirements pages to be used in conjunction with illustrations for dimensioning purposes, the requirements pages will contain Master Requirement Codes, mode codes, and a statement of the requirement. A response to requirements on a requirements page is necessary only for those Master Requirement Codes applicable to the illustration selected.

g. Appendix C - Technical Data Tables:

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This appendix contains conversion charts and similar data pertinent to the requirements in Section I/III, when applicable.

3. Enter administrative MRC CLQL immediately following the last FIIG requirement reply, as instructed below:

<u>MRC</u>	<u>Mode</u> <u>Code</u>	<u>Requirement</u>	<u>Example</u>
CLQL	G	COLLOQUIAL NAME (common usage name by which an item is known)	CLQLGWOVEN WIRE CLOTH*

4. Special Instructions and Indicator Definitions

a. Measurements:

Unless otherwise indicated within a requirement example, enter all measurements in decimal form, carried to the nearest three decimal places, with a minimum of one digit preceding the decimal. For SI (metric), enter all measurements with a minimum of one digit before and after the decimal. For fraction to decimal conversion, see Appendix C.

b. Indicators:

A cross hatch (#) following an AIN, MRC, Reply Code or Drawing Number indicates for "ALL EXCEPT USA" use only.

5. Indexes

a. Index of Data Requirements

This index is arranged in alphabetic sequence by Master Requirement Code, cross-referenced to the applicable data requirement and page number(s).

b. Index of Approved Item Names

This index is arranged in alphabetic sequence referenced to Applicability Key.

c. Applicability Key Index

This index is arranged in Applicability Key Sequence.

6. Maintenance

Requests for revisions and other changes will be directed to:

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INDEX OF APPROVED ITEM NAMES COVERED BY THIS FIIG

INDEX OF APPROVED ITEM NAMES COVERED BY THIS FIIG

<u>Approved Item Name</u>	<u>INC</u>	<u>App Key</u>
Relay		
1. (Electrical) A protective or control device which completes or breaks an electrical circuit in response to electrical changes in an external circuit. The main contacts and actuating element are not in series. It is not designed to permit manual opening of the protected or controlled circuit but may have facilities for manual closing or reset upon automatic opening of the circuit. It is classified by the type of contact actuation, such as electromagnetic or thermal, or by a type of construction, such as resonant reed or solid state, rather than by its application. Such uses as time delay, antenna switching, and keying are secondary features since, for example, a time delay relay may be of the electromagnetic, motor driven, solid state, or thermal type. Motor driven switches, electron tubes, and semiconductor devices which may function as switching devices are not considered as relays. For items with provisions for manual operation, see RELAY-SWITCH. For items in which the main contacts and actuating elements are in series, see CIRCUIT BREAKER. See also REGULATOR, CURRENT; REGULATOR, VOLTAGE; SWITCH (as modified); and TIMER, SEQUENTIAL.		
RELAY (1), ELECTROMAGNETIC	32512	A
A relay which is actuated by the effect of a magnetic field developed by the current in its energizing coil(s). Includes solenoid and armature types. Excludes CONTACTOR, MAGNETIC; RELAY, METER MOVEMENT; RELAY, MOTOR DRIVEN; RELAY, REED; RELAY, RESONANT REED; RELAY, ROTARY; AND SWITCH, STEPPING.		
RELAY (1), REED	30544	C
A relay consisting of an energizing coil and a metallic reed switch mechanism. The reeds serve as both core and contacts, which are not hinged or pivoted and which move by flexure when acted upon by a magnetic field induced by energization of the coil. It may also include a biasing magnet. The biasing magnet, either aids or opposes the movement of the reeds and the opening or closing of the contacts. For items in which actuation is dependent on the resonant frequency of the reeds see RELAY, RESONANT REED. Excludes RELAY, ELECTROMAGNETIC.		
RELAY (1), RESONANT REED	26840	B
An item consisting of one or more metallic reeds, mechanically resonant at a specified frequency and mounted in a permanent magnetic field. Actuation of the relay occurs when an alternating current signal at the resonant frequency of one of the reeds is introduced into a field winding. Excludes RELAY, ELECTROMAGNETIC.		

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APPLICABILITY KEY INDEX

	<u>A</u>	<u>B</u>	<u>C</u>
NAME	X	X	X
APMP		X	
CRHZ		AR	
APMS		AR	
AYSC	AR		
AYSD	AR		
CRNG	AR	AR	AR
CSKP	AR		
CWAB	AR	AR	AR
CSQC	AR		
CTDL	AR	AR	AR
CWGM	AR		
APNQ	AR	AR	AR
APCN	X	X	X
AKDX	X	X	X
APNA	AR		AR
CSXF	AR	AR	AR
CRPQ	AR	AR	AR
CWJB	AR	AR	AR
CTCN	AR		
AJSS	AR		
TTQY	X	X	X
CRXH	AR		
APNP	X	X	X
ADZC	AR	AR	AR
AJLZ	AR	AR	AR
ABHP	X	X	X
ABMK	AR	AR	AR
ABKW	AR	AR	AR
ADAV	AR	AR	AR
AXHR	X	X	X
CQYJ	AR	AR	AR
ABKQ	AR	AR	AR
ABKR	AR	AR	AR
AEBW	AR	AR	AR
CSQJ	AR	AR	AR
CTYK	AR	AR	AR
AEBV	AR	AR	AR
ABTD	AR	AR	AR
THSD	AR	AR	AR
CQJX	AR	AR	AR
AAJD	AR	AR	AR
CMLP	AR	AR	AR
AASA	AR	AR	AR
AAJF	AR	AR	AR
CBBL	AR	AR	AR
FEAT	AR	AR	AR
TEST	AR	AR	AR

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SPCL	AR	AR	AR
ZZZK	AR	AR	AR
ZZZT	AR	AR	AR
ZZZY	AR	AR	AR
CRTL	AR	AR	AR
PRPY	AR	AR	AR
ELRN	AR	AR	AR
NHCF	AR	AR	AR
AKSL	AR	AR	AR
AGAV	AR	AR	AR
CXCY	AR	AR	AR
CBME	AR	AR	AR
AFJN	AR	AR	AR
BBRG	AR	AR	AR
AFRG	AR	AR	AR
AFRH	AR	AR	AR
ADTV	AR	AR	AR
PRMT	AR	AR	AR
PMWT	AR	AR	AR
PMLC	AR	AR	AR

SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

ALL

NAME	D	ITEM NAME
------	---	-----------

Definition: A NOUN, WITH OR WITHOUT MODIFIERS, BY WHICH AN ITEM OF SUPPLY IS KNOWN.

Reply Instructions: Enter the applicable Item Name Code from the index appearing in the General Information Section. (e.g., NAMED26840*)

B

APMP	A	RESONANT REED QUANTITY
------	---	------------------------

Definition: THE SPECIFIC NUMBER OF RESONANT REEDS.

Reply Instructions: Enter the quantity. (e.g., APMPA2*)

B*

CRHZ	B	RESONANT REED FREQUENCY IN HERTZ
------	---	----------------------------------

Definition: THE NUMBER OF CYCLIC CHANGES PER SECOND (HERTZ) AT WHICH A RESONANT REED VIBRATES TO EFFECT THE CLOSING OR OPENING OF THE CONTACTS.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 1, followed by the mode code and the numeric value. See Appendix C for entering instructions. (e.g., CRHZ1XB400.0*; CRHZ1AB100.0*; CRHZ1BB250.0*; CRHZ1CB456.0*)

B*

APMS	F	FREQUENCY TOLERANCE IN PERCENT
------	---	--------------------------------

Definition: THE PERMISSIBLE VARIATION IN THE FREQUENCY, EXPRESSED IN PERCENT.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 1, followed by the Mode Code and the numeric values, separated by a slash. Precede minus values with a M and positive values with a P. (e.g., APMS1XFM10.0/P10.0*)

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SECTION I

APP Key	MRC	Mode Code	Requirements
<p>If the item has more than one reed with different tolerance values, use I/SAC and enter the frequency tolerance for each reed in the same respective order as given in reply to MRC CRHZ. (e.g., APMS1AFM2.0/P2.0*; APMS1BFM5.0/P5.0*; APMS1CFM10.0/P10.0*)</p>			
A*			
AYSC	A		PILE-UP MAIN CONTACT FORM ARRANGEMENT
<p>Definition: THE NUMBER AND COMBINATIONS(S) OF THE BASIC CONTACT FORMS, IN THE ORDER OF ASSEMBLAGE, WHICH MAKE UP THE SWITCHING STRUCTURE OF THE PILE-UP MAIN CONTACTS.</p> <p>Reply Instructions: Enter the quantity and contact form designation in accordance with instructions in Appendix B, Reference Drawing Group A. (e.g., AYSCA1A*; AYSCA1A\$\$A2A*)</p> <p>Consider all contacts as being main contacts unless source data specifically states or indicates contacts as being "AUXILIARY."</p>			
A*			
AYSD	A		PILE-UP AUXILIARY CONTACT FORM ARRANGEMENT
<p>Definition: THE NUMBER AND COMBINATION(S) OF THE BASIC CONTACT FORMS, IN ORDER OF ASSEMBLAGE, WHICH MAKE UP THE SWITCHING STRUCTURE OF THE PILE-UP AUXILIARY CONTACTS.</p> <p>Reply Instructions: Enter the quantity and contact form designation in accordance with instructions in Appendix B, Reference Drawing Group A. (e.g., AYSDA1A2C*; AYSDA1A2C\$\$A1A2D*)</p>			
ALL*			
CRNG	J		NONPILE-UP MAIN CONTACT ARRANGEMENT
<p>Definition: THE DESIGNATION THAT IDENTIFIES THE SCHEMATIC DIAGRAM OF THE ELECTRICAL CONFIGURATION OF THE MAIN NONPILE-UP CONTACTS INCLUDING THE NUMBER OF POLES OR FORMS.</p> <p>Reply Instructions: Enter the applicable Reply Code, followed by the quantity of poles or contact arrangements, in accordance with the instructions in Appendix B, Reference Drawing Group B. (e.g., CRNGJAD2*; CRNGJAD1\$\$JAQ1*)</p>			

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SECTION I

APP Key	MRC	Mode Code	Requirements
Consider all contacts as being main contacts unless source data specifically states or indicates contacts as being "AUXILIARY."			
A*			
CSKP	J		NONPILE-UP AUXILIARY CONTACT ARRANGEMENT
Definition: THE DESIGNATION THAT IDENTIFIES THE SCHEMATIC DIAGRAM OF THE ELECTRICAL CONFIGURATION OF THE AUXILIARY NONPILE-UP CONTACTS INCLUDING THE NUMBER OF POLES OR FORMS.			
Reply Instructions: Enter the applicable Reply Code, followed by the quantity of poles or contact arrangements, in accordance with the instructions in Appendix B , Reference Drawing Group B. (e.g., CSKPJAD2*; CSKPJAD1\$\$JAQ1*)			
ALL*			
CWAB	J		MAIN CONTACT MAXIMUM VOLTAGE RATING IN VOLTS
Definition: THE HIGHEST VOLTAGE AT WHICH THE MAIN CONTACTS ARE RATED FOR NORMAL OPERATION, EXPRESSED IN VOLTS.			
Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., CWABJAC115.0*)			
If more than one value is given for the same current type (e.g., 125/250), enter the maximum value only. If more than one value is given for different current types, use AND coding (\$\$) and record the maximum value for each current type in reply code sequence. (e.g., CWABJAC200.0\$\$JDC180.0*)			
		<u>REPLY CODE</u>	<u>REPLY (AN87)</u>
		AC	AC
		DC	DC
A*			
CSQC	J		AUXILIARY CONTACT MAXIMUM VOLTAGE RATING IN VOLTS
Definition: THE HIGHEST VOLTAGE AT WHICH THE AUXILIARY CONTACTS ARE RATED FOR NORMAL OPERATION, EXPRESSED IN VOLTS.			

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SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., CSQCJAC115.0*)

If more than one value is given for the same current type (e.g., 125/250) enter the maximum value only. If more than one value is given for different current types, use AND coding (\$\$) and record the maximum value for each current type in reply code sequence. (e.g., CSQCJAC200.0\$\$JDC180.0*)

REPLY CODE

AC
DC

REPLY (AN87)

AC
DC

ALL*

CTDL	J	MAIN CONTACT LOAD CURRENT RATING AT MAXIMUM RATED VOLTAGE
------	---	--

Definition: THE AMOUNT OF CURRENT THE MAIN CONTACTS ARE RATED TO MAKE OR BREAK AT MAXIMUM RATED VOLTAGE, WITH A SPECIFIED LOAD.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 2, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. See Appendix C for entering instructions. (e.g., CTDL1BJAMDC3.0*; CTDL1AJAMDC10.0*; CTDL1CJAMDC3.5*; CTDL1BJLAAC100.0\$\$JLADC150.0*)

If the type of load is not specified, or the current rating is specified as "nominal" or "noninductive" record as "resistive load." If a "tungsten" or "T Rated" current rating is given, record as "lamp load."

Table 1

REPLY CODE

AM
LA

REPLY (AN86)

AMPERES
MILLIAMPERES

Table 2

REPLY CODE

AC
DC

REPLY (AN87)

AC
DC

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

A*

CWGM	J	AUXILIARY CONTACT LOAD CURRENT RATING AT MAXIMUM RATED VOLTAGE	
------	---	---	--

Definition: THE AMOUNT OF CURRENT THE AUXILIARY CONTACTS ARE RATED TO MAKE OR BREAK AT MAXIMUM RATED VOLTAGE, WITH A SPECIFIED LOAD.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 2, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. See Appendix C for entering instructions. (e.g., CWGM1BJAMDC3.0*; CWGM1AJAMDC10.0*; CWGM1CJAMDC3.5*; CWGM1BJLAAC100.0\$\$JLADC150.0*)

If the type of load is not specified, or the current rating is specified as "nominal" or "noninductive" record as "resistive load." If a "tungsten" or "T Rated" current rating is given, record as "lamp load."

Table 1

REPLY CODE

AM

LA

REPLY (AN86)

AMPERES

MILLIAMPERES

Table 2

REPLY CODE

AC

DC

REPLY (AN87)

AC

DC

ALL*

APNQ	D	ARC QUENCHING METHOD
------	---	----------------------

Definition: THE MEANS OF QUENCHING AN ARC.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., APNQDAB*)

REPLY CODE

AB

AC

AD

AE

AF

REPLY (AK63)

AIR

CAPACITOR

INERT GAS

MAGNETIC

NITROGEN

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SECTION I

APP Key	MRC	Mode Code	Requirements
		AG	OIL

ALL

APCN A COIL QUANTITY

Definition: THE NUMBER OF COILS INCLUDED ON THE ITEM.

Reply Instructions: Enter the quantity. (e.g., APCNA1*)

A coil consists of one or more windings on a common core.

ALL

AKDX A WINDING QUANTITY

Definition: THE NUMBER OF INDIVIDUAL (NOT ELECTRICALLY CONNECTED) WINDINGS.

Reply Instructions: Enter the quantity. (e.g., AKDXA2*)

A winding consists of one or more turns of conductive wire and must have two terminating ends. An intermediate terminal (between two ends) constitutes a tapped winding and does NOT establish two windings. Two or more windings may share the same core.

A*, C*

APNA J WINDING DC RESISTANCE RATING

Definition: THE MEASURED OPPOSITION TO THE FLOW OF DIRECT CURRENT OFFERED BY THE ITEM WINDING.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 3 followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. See Appendix C for entering instructions. (e.g., APNA1ZJQA20.0*; APNA1AJQB8.0\$\$JQC10.0*; APNA1BJQB18.0\$\$JQC22.0*)

Table 1

REPLY CODE

K

Q

REPLY (AA57)

KILOHMS

OHMS

Table 2

REPLY CODE

REPLY (AC20)

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SECTION I

APP Key	MRC	Mode Code	Requirements
		A	NOMINAL
		B	MINIMUM
		C	MAXIMUM

ALL*

CSXF J OPERATING VOLTAGE RATING AND TYPE AT
SPECIFIED TEMP

Definition: THE AMOUNT AND TYPE OF VOLTAGE REQUIRED AT DESIGNATED TEMPERATURE TO BE APPLIED TO THE INPUT OR ENERGIZING ELEMENT OF THE ITEM TO ENSURE NORMAL OPERATION OF THE SWITCHING ELEMENTS.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 3 followed by the mode code, the applicable Reply Codes from Tables 1, 2 and 3 below, and the numeric value. See Appendix C for entering instructions. (e.g., CSXF1XJELACAX12.0*; CSXF1AJELACAY110.0\$\$JELDCAY12.0*; CSXF1BJELACAY7.1\$\$JELDCAY6.0*)

If the temperature at which the voltage rating was established is not given, assume that the voltage rating was established at approximate room temperature and enter Reply Code AX from Table 3 below.

Table 1

REPLY CODE

LL
EL

REPLY (AN86)

MILLIVOLTS
VOLTS

Table 2

REPLY CODE

AC
DC

REPLY (AN87)

AC
DC

Table 3

REPLY CODE

BB
BC
AX
BL
AY
AZ
BA

REPLY (AP15)

NONSTANDARD TEMP
20 DEG CELSIUS
25 DEG CELSIUS
40 DEG CELSIUS
85 DEG CELSIUS
125 DEG CELSIUS
200 DEG CELSIUS

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SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

ALL*

CRPQ J NOMINAL OPERATING CURRENT RATING AND TYPE

Definition: THE REQUIRED CURRENT VALUE, APPLIED TO THE ENERGIZING ELEMENT, AT WHICH THE SWITCHING MECHANISM OR ACTUATOR ELEMENT MUST HAVE ASSUMED A FULLY OPERATED POSITION.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 3, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. See Appendix C for entering instructions. (e.g., CRPQ1XJAMAC2.2*; CRPQ1AJAMAC3.0\$\$JAMAC2.0*; CRPQ1BJLADC188.0\$\$JLAAC335.0*)

Table 1

REPLY CODE

AM

UA

LA

REPLY (AN86)

AMPERES

MICROAMPERES

MILLIAMPERES

Table 2

REPLY CODE

AC

DC

REPLY (AN87)

AC

DC

ALL*

CWJB J ENERGIZING ELEMENT POWER RATING

Definition: THE AMOUNT OF ELECTRICAL ENERGY WHICH THE ENERGIZING ELEMENT IS CAPABLE OF DISSIPATING AT ITS RATED VOLTAGE AND/OR CURRENT DURING NORMAL OPERATION.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., CWJBJWW250.0*)

For items with multiple energizing elements and different power ratings, use AND coding (\$\$) and enter a value for each element in ascending numeric value. (e.g., CWJBJWW10.0\$\$JWW200.0*)

REPLY CODE

KA

KW

REPLY (AN86)

KILOVOLT-AMPERES

KILOWATTS

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SECTION I

APP Key	MRC	Mode Code	Requirements
		UW	MICROWATTS
		LW	MILLIWATTS
		EA	VOLTS-AMPERES
		WW	WATTS

NOTE FOR MRC CTCN: REPLY TO MRC CTCN ONLY WHEN MULTIPLE OR OPPOSED INPUT ELEMENTS ARE DIFFERENTIALLY WOUND.

A* (See Note Above)

CTCN J MINIMUM DIFFERENTIAL ELECTRICAL OPERATING RATING

Definition: THE LOWEST NET AMOUNT OF THE SPECIFIED ENERGIZING ELECTRICAL CHARACTERISTIC NECESSARY FOR THE NORMAL FUNCTIONING OF THE RELAY. THE NET VALUE BEING THE DIFFERENCE BETWEEN MULTIPLE OR OPPOSED INPUT ELEMENTS DURING NORMAL OPERATION.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., CTCNJAM30.0*)

<u>REPLY CODE</u>	<u>REPLY (AN86)</u>
AM	AMPERES
LA	MILLIAMPERES
EL	VOLTS
WW	WATTS

A*

AJSS J FREQUENCY IN HERTZ

Definition: THE CYCLES PER SECOND (HERTZ) OF THE ALTERNATING CURRENT.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AJSSJA60.0*)

If the source document specifies a frequency range, such as "50 to 60 cycles," use AND coding (\$\$) and record the values as minimum and maximum. (e.g., AJSSJB50.0\$\$JC60.0*)

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
If source document specifies two individual nominal frequencies, such as "60 cycles, 400 cycles," use OR coding (\$) and record both values in ascending sequence. (e.g., AJSSJA60.0\$JA400.0*)			
		<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
		A	NOMINAL
		B	MINIMUM
		C	MAXIMUM

ALL

TTQY J TERMINAL TYPE AND QUANTITY

Definition: INDICATES THE TYPE AND NUMBER OF TERMINALS FOR PROVIDING ELECTRICAL CONNECTION.

Reply Instructions: Enter the applicable I/SAC from Appendix C, Table 4, followed by the mode code, the applicable Reply Code from [Appendix A](#), Table 4, and the quantity. See Appendix C for entering instructions. (e.g., TTQY1XJAAF5*; TTQY1AJACZ2*; TTQY1BJABQ3*)

See Appendix B, Reference Drawing Group C, for typical terminal types.

A*

CRXH J TIME DELAY

Definition: THE INTERVAL FOR WHICH THE ITEM, BY DESIGN, IS PURPOSELY DELAYED BETWEEN INTRODUCTION OF POWER INTO THE ENERGIZING ELEMENT AND COMPLETION OF TRAVEL OF THE CONTACT CARRIER, AND/OR BETWEEN INTERRUPTION OF THE ENERGIZING POWER AND RETURN OF THE CONTACT CARRIER TO ITS NORMAL DE-ENERGIZING POSITION.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 5, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. See Appendix C, Page C-2, for entering instructions. (e.g., CRXH1AJSCA27.00*; CRXH1DJSCB0.75\$\$JSCC10.00* CRXH1EJSCB1.00\$\$JSCC30.00*)

For items that are adjustable, but are SET AND SEALED by the manufacturer to a definite value, consider these as being FIXED, and enter the specific value for which the item is factory set and sealed.

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
<hr/>			
Table 1			
		<u>REPLY CODE</u>	<u>REPLY (AH68)</u>
		HR	HOURS
		MN	MINUTES
		SC	SECONDS
Table 2			
		<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
		A	NOMINAL
		B	MINIMUM
		C	MAXIMUM

ALL

APNP D DUTY TYPE

Definition: INDICATES THE TYPE OF DUTY PROVIDED.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., APNPDAAF*)

<u>REPLY CODE</u>	<u>REPLY (AD63)</u>
AAE	CONTINUOUS
AAF	INTERMITTENT

ALL*

ADZC D ENVIRONMENTAL PROTECTION

Definition: THE ENVIRONMENTAL ELEMENTS OR CONDITIONS THAT AN ITEM IS DESIGNED OR PROTECTED TO RESIST OR WITHSTAND SATISFACTORILY.

Reply Instructions: Enter the applicable Reply Code from [Appendix A](#), Table 1. (e.g., ADZCDACY*; ADZCDAAC\$\$DABB*)

See Appendix C, Table 12, for determination of environmental protection types.

ALL*

AJLZ D FAILURE RATE SUFFIX LETTER

FIIG A033
SECTION I

APP		Mode	
Key	MRC	Code	Requirements

Definition: THE SUFFIX LETTER FROM THE RELAYS MILITARY SPECIFICATION, INDICATING THE PERCENT FAILURE RATE LEVEL PER 10,000 CYCLES.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AJLZDD*)

<u>REPLY CODE</u>	<u>REPLY (AE03)</u>
A	L (3.0)
B	M (1.0)
C	P (0.1)
D	R (0.01)

ALL

ABHP J OVERALL LENGTH

Definition: THE DIMENSION MEASURED ALONG THE LONGITUDINAL AXIS WITH TERMINATED POINTS AT THE EXTREME ENDS OF THE ITEM.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., ABHPJAA8.000*; ABHPJAB7.750\$\$JAC8.250*; ABHPJLA203.2*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

<u>Table 1</u>	
<u>REPLY CODE</u>	<u>REPLY (AA05)</u>
A	INCHES
L	MILLIMETERS

<u>Table 2</u>	
<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
A	NOMINAL
B	MINIMUM
C	MAXIMUM

NOTE FOR MRCS ABMK, ABKW AND ADAV: REPLY TO MRCS ABMK AND ABKW, OR ADAV, AS APPLICABLE TO THE ITEM BEING DESCRIBED. INCLUDE HOUSING DIMENSIONS, BUT EXCLUDE FLEXIBLE WIRE LEAD DIMENSIONS.

FIIG A033
SECTION I

APP		Mode	
Key	MRC	Code	Requirements

ALL* (See Note Above)

ABMK J OVERALL WIDTH

Definition: AN OVERALL MEASUREMENT TAKEN AT RIGHT ANGLES TO THE LENGTH OF AN ITEM, IN DISTINCTION FROM THICKNESS.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., ABMKJAA2.500*; ABMKJAB2.250\$\$JAC2.750*; ABMKJLA63.5*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

Table 1

REPLY CODE

A

L

REPLY (AA05)

INCHES

MILLIMETERS

Table 2

REPLY CODE

A

B

C

REPLY (AC20)

NOMINAL

MINIMUM

MAXIMUM

ALL* (See Note Preceding MRC ABMK)

ABKW J OVERALL HEIGHT

Definition: THE DISTANCE MEASURED IN A STRAIGHT LINE FROM THE BOTTOM TO THE TOP OF AN ITEM.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., ABKWJAA3.500*; ABKWJAB3.250\$\$JAC3.750*; ABKWJLA88.9*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

Table 1

REPLY CODE

A

L

REPLY (AA05)

INCHES

MILLIMETERS

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
<hr/>			
Table 2			
		<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
		A	NOMINAL
		B	MINIMUM
		C	MAXIMUM

ALL* (See Note Preceding MRC ABMK)

ADAV J OVERALL DIAMETER

Definition: A MEASUREMENT OF THE LONGEST STRAIGHT LINE ACROSS A CIRCULAR CROSS-SECTIONAL PLANE.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., ADAVJAA2.500*; ADAVJAB2.375\$JAC2.625*; ADAVJLA60.9*)

Table 1	
<u>REPLY CODE</u>	<u>REPLY (AA05)</u>
A	INCHES
L	MILLIMETERS

Table 2	
<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
A	NOMINAL
B	MINIMUM
C	MAXIMUM

ALL

AXHR J MOUNTING FACILITY TYPE AND QUANTITY

Definition: INDICATES THE TYPE AND NUMBER OF FACILITIES BY WHICH THE ITEM IS MOUNTED.

Reply Instructions: Enter the applicable I/SAC from Appendix C, Table 6, followed by the mode code, and the applicable Reply Code from [Appendix A](#), Table 2, and the quantity. (e.g., AXHR1XJACQ1*; AXHR1AJAFA1*; AXHR1BJAFA1\$JAHF2*)

NOTE FOR MRC CQYJ: REPLY TO MRC CQYJ ONLY WHEN REPLY CODE BCX, AHF, AET, ACQ OR AEW WAS ENTERED IN REPLY TO MRC AXHR.

ALL* (See Note Above)

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
CQYJ		D	MOUNTING FACILITY PATTERN

Definition: THE GENERAL CONFIGURATION AND RELATIVE POSITION OF THE FACILITIES PROVIDED FOR MOUNTING THE ITEM.

Reply Instructions: Enter the applicable I/SAC from Appendix C, Table 6, followed by the mode code and the applicable Reply Code from [Appendix A](#), Table 7. (e.g., CQYJ1XDCH*; CQYJ1ADCH*; CQYJ1BDCL*)

See Appendix B, Reference Drawing Group D for typical mounting patterns.

ALL*

ABKQ	J	CENTER TO CENTER DISTANCE BETWEEN MOUNTING FACILITIES PARALLEL TO LENGTH
------	---	--

Definition: THE DISTANCE BETWEEN THE CENTER OF ONE MOUNTING FACILITY AND THE CENTER OF THE ADJACENT MOUNTING FACILITY PARALLEL TO THE LENGTH.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., ABKQ1XJAA2.125*; ABKQ1XJLA53.8*; ABKQ1XJAB2.000\$\$JAC2.250*; ABKQ1AJAA2.125*; ABKQ1BJAB2.000\$\$JAC2.250*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

Table 1

REPLY CODE

A

L

REPLY (AA05)

INCHES

MILLIMETERS

Table 2

REPLY CODE

A

B

C

REPLY (AC20)

NOMINAL

MINIMUM

MAXIMUM

ALL*

ABKR	J	CENTER TO CENTER DISTANCE BETWEEN MOUNTING FACILITIES PARALLEL TO WIDTH
------	---	---

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

Definition: THE DISTANCE BETWEEN THE CENTER OF ONE MOUNTING FACILITY AND THE CENTER OF THE ADJACENT MOUNTING FACILITY PARALLEL TO THE WIDTH.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., ABKR1XJAA1.000*; ABKR1XJLA25.4*; ABKR1AJAA1.125*; ABKR1BJAB2.000\$\$JAC2.250*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

Table 1

REPLY CODE

A
L

REPLY (AA05)

INCHES
MILLIMETERS

Table 2

REPLY CODE

A
B
C

REPLY (AC20)

NOMINAL
MINIMUM
MAXIMUM

ALL*

AEBW	J	CENTER TO CENTER DISTANCE BETWEEN MOUNTING FACILITIES PARALLEL TO HEIGHT
------	---	--

Definition: THE DISTANCE BETWEEN THE CENTER OF ONE MOUNTING FACILITY AND THE CENTER OF THE ADJACENT MOUNTING FACILITY PARALLEL TO THE HEIGHT.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., AEBW1XJAA1.000*; AEBW1XJLA28.4*; AEBW1AJAA1.125*; AEBW1BJAB0.875\$\$JAC1.125*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

Table 1

REPLY CODE

A
L

REPLY (AA05)

INCHES
MILLIMETERS

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

Table 2

REPLY CODE

A
B
C

REPLY (AC20)

NOMINAL
MINIMUM
MAXIMUM

NOTE FOR MRC CSQJ: REPLY TO MRC CSQJ ONLY WHEN REPLY CODE CN HAS BEEN ENTERED FOR MRC CQYJ.

ALL* (See Note Above)

CSQJ	J	CENTER TO CENTER DISTANCE BETWEEN MOUNTING FACILITIES PARALLEL TO THE ALTITUDE OF AN ISOSCELES TRIANGLE
------	---	---

Definition: THE DISTANCE BETWEEN THE CENTER OF ONE MOUNTING FACILITY AND THE CENTER OF THE ADJACENT MOUNTING FACILITY PARALLEL TO THE ALTITUDE OF AN ISOSCELES TRIANGLE.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., CSQJ1XJAA1.125*; CSQJ1XJLA38.1*; CSQJ1AJAA1.000*; CSQJ1BJAB0.875\$\$JAC1.125*)

See Appendix B, Reference Drawing Group E, for standardized dimensional instructions.

Table 1

REPLY CODE

A
L

REPLY (AA05)

INCHES
MILLIMETERS

Table 2

REPLY CODE

A
B
C

REPLY (AC20)

NOMINAL
MINIMUM
MAXIMUM

NOTE FOR MRC CTYK: REPLY TO MRC CTYK WHEN REPLY CODE CC HAS BEEN ENTERED IN REPLY TO MRC CQYJ.

FIIG A033
SECTION I

APP		Mode	
Key	MRC	Code	Requirements

ALL* (See Note Above)

CTYK J ANGLE BETWEEN ADJACENT MOUNTING FACILITIES

Definition: A MEASUREMENT OF THE ANGLE BETWEEN ADJACENT MOUNTING FACILITIES.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., CTYK1XJDA120.0*; CTYK1XJRA2.4*; CTYK1AJDA160.0*; CTYK1BJDB160.0\$\$JDC180.0*)

Table 1

REPLY CODE

D

R

REPLY (AP38)

DEGREES

RADIANS

Table 2

REPLY CODE

A

B

C

REPLY (AC20)

NOMINAL

MINIMUM

MAXIMUM

NOTE FOR MRC AEBV: REPLY TO MRC AEBV WHEN REPLY CODE ACQ HAS BEEN ENTERED FOR MRC AXHR.

ALL* (See Note Above)

AEBV J UNTHREADED MOUNTING HOLE DIAMETER

Definition: THE LENGTH OF A STRAIGHT LINE WHICH PASSES THROUGH THE CENTER OF AN UNTHREADED MOUNTING HOLE, AND TERMINATES AT THE CIRCUMFERENCE.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., AEBV1XJAA0.203*; AEBV1XJLA5.0*; AEBV1AJAA0.203*; AEBV1BJAB0.223\$\$JAC0.227*)

Table 1

REPLY CODE

A

L

REPLY (AA05)

INCHES

MILLIMETERS

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SECTION I

APP Key	MRC	Mode Code	Requirements
<hr/>			
		<u>Table 2</u>	
		<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
		A	NOMINAL
		B	MINIMUM
		C	MAXIMUM

NOTE FOR MRC ABTD: REPLY TO MRC ABTD ONLY IF REPLY CODE BCX HAS BEEN ENTERED FOR MRC AXHR.

ALL* (See Note Above)

ABTD J MOUNTING SLOT WIDTH

Definition: A MEASUREMENT TAKEN AT RIGHT ANGLES TO THE LENGTH OF THE MOUNTING SLOT, IN DISTINCTION FROM THICKNESS.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., ABTD1XJAA0.281*; ABTD1XJLA5.0*; ABTD1AJAA0.203*; ABTD1BJAB0.247\$\$JAC0.253*)

<u>Table 1</u>	
<u>REPLY CODE</u>	<u>REPLY (AA05)</u>
A	INCHES
L	MILLIMETERS

<u>Table 2</u>	
<u>REPLY CODE</u>	<u>REPLY (AC20)</u>
A	NOMINAL
B	MINIMUM
C	MAXIMUM

ALL*

THSD D THREAD SERIES DESIGNATOR

Definition: A DESIGNATION DISTINGUISHING ONE GROUP OF THREAD DIAMETER- PITCH COMBINATIONS FROM ANOTHER BY THE NUMBER OF THREADS PER MEASUREMENT SCALE FOR A SPECIFIC DIAMETER.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code and the applicable Reply Code from the table below. (e.g., THSD1XDNE*; THSD1ADNC*; THSD1BDNF*)

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
<hr/>			
		<u>REPLY CODE</u>	<u>REPLY (AH06)</u>
		BA	BA
		SM	ISO M
		SS	ISO S
		EM	M (Metric)
		MJ	MJ (Metric J Series)
		UN	UN
		NC	UNC
		NE	UNEF
		NF	UNF
		NJ	UNJ
		JC	UNJC
		JE	UNJEF
		JF	UNJF
		JS	UNJS
		NM	UNM
		NS	UNS
			<u>APPLICABLE MRCS</u>
			CQJX, AAJF
			CQJX
			CQJX
			CQJX
			CQJX
			CQJX, CMLP, AAJD
			CQJX, AAJD
			CQJX, AAJD
			CQJX, AAJD
			CQJX, CMLP, AAJD
			CQJX, AAJD
			CQJX, AAJD
			CQJX, AAJD
			CQJX, CMLP, AAJD
			CQJX, CMLP
			CQJX, CMLP, AAJD

ALL*

CQJX J NOMINAL THREAD SIZE

Definition: A DESIGNATION THAT IS USED FOR THE PURPOSE OF GENERAL IDENTIFICATION OF THE THREAD.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Code from the table below, and the numeric value. (e.g., CQJX1XJA0.625*; CQJX1XJL6.3*; CQJX1AJA0.500*; CQJX1BJA0.500*)

See Appendix C, Table 7 for fraction to decimal conversion.

<u>REPLY CODE</u>	<u>REPLY (AA05)</u>
A	INCHES
L	MILLIMETERS

ALL*

AAJD A THREAD CLASS

Definition: A NUMERIC-ALPHA DESIGNATOR INDICATING THE PITCH DIAMETER TOLERANCE AND AN EXTERNAL OR INTERNAL THREAD.

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SECTION I

APP Key	MRC	Mode Code	Requirements
<p>Reply Instructions: Enter the applicable I/SAC from Appendix C, Table 6, followed by the mode code and the thread class. (e.g., AAJD1XA2B*; AAJD1AA2A*; AAJD1BA2A*)</p>			

ALL*

CMLP A THREAD QUANTITY PER INCH

Definition: THE NUMBER OF THREADS ON THE ITEM PER LINEAR INCH MEASURED ON A LINE PARALLEL TO THE THREAD AXIS.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, and the quantity. (e.g., CMLP1XA20*; CMLP1AA24*; CMLP1BA32*)

NOTE FOR MRCS AASA AND AAJF: REPLY TO THESE MRCS ONLY WHEN APPLICABLE TO YOUR ITEM OF SUPPLY.

ALL* (See Note Above)

AASA J THREAD LENGTH

Definition: A MEASUREMENT OF THE EXTENT OF THREADS, INCLUDING INCOMPLETE THREADS, ALONG A LINE PARALLEL TO THE LONGITUDINAL AXIS.

Reply Instructions: Enter the applicable I/SAC from [Appendix C](#), Table 6, followed by the mode code, the applicable Reply Codes from Tables 1 and 2 below, and the numeric value. (e.g., AASA1XJAA1.250*; AASA1AJAB1.010\$\$JAC1.250*; AASA1BJAB1.455\$\$JAC1.465*; AASA1XJLA6.35*)

Table 1

REPLY CODE

A

L

REPLY (AA05)

INCHES

MILLIMETERS

Table 2

REPLY CODE

A

B

C

REPLY (AC20)

NOMINAL

MINIMUM

MAXIMUM

ALL* (See Note Preceding MRC AASA)

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
AAJF	D	THREAD DIRECTION	
Definition: THE DIRECTION OF THE THREAD WHEN VIEWED AXIALLY. A RIGHT-HAND THREAD WINDS IN A CLOCKWISE DIRECTION WHILE A LEFT-HAND THREAD WINDS IN A COUNTERCLOCKWISE DIRECTION.			
Reply Instructions: Enter the applicable I/SAC from Appendix C , Table 6, followed by the mode code, and the applicable Reply Code from the table below. (e.g., AAJF1XDAAG*; AAJF1ADAAL*; AAJF1BDAAL*)			
		<u>REPLY CODE</u>	<u>REPLY (AA38)</u>
		AAG	LEFT-HAND
		AAL	RIGHT-HAND

NOTE FOR MRCS CBBL AND FEAT: E MODE REPLIES WILL NOT BE ACCEPTED IN REPLY TO MRC CBBL. IF A REPLY IS NOT REFERENCED ON THE TABLE FOR MRC CBBL, ENTER THE FEATURE IN REPLY TO MRC FEAT.

ALL* (See Note Above)

CBBL D FEATURES PROVIDED

Definition: THOSE FEATURES, NOT OTHERWISE SPECIFIED, WHICH MAY BE REQUIRED FOR PROPER FUNCTIONING OF THE ITEM.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., CBLDBDN*; CBLDBDN\$\$DBDQ*)

<u>REPLY CODE</u>	<u>REPLY (AN47)</u>
BDR	ARC QUENCHING
BDQ	COIL VOLTAGE SUPPRESSION
BDT	ELECTROSTATIC SHIELD
BDN	LATCHING CONTACTS
BDS	MAGNETIC SHIELD
BDP	POLARIZED
CQT	WETTED CONTACT (Mercury)

ALL * (See Note Preceding MRC CBBL)

FEAT G SPECIAL FEATURES

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
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Definition: THOSE UNUSUAL OR UNIQUE CHARACTERISTICS OR QUALITIES OF AN ITEM NOT COVERED IN THE OTHER REQUIREMENTS AND WHICH ARE DETERMINED TO BE ESSENTIAL FOR IDENTIFICATION.

Reply Instructions: Enter the reply in clear text. Separate multiple replies with a semicolon. (e.g., FEATGADJUSTABLE NOSE CLIP*; FEATGADJUSTABLE NOSE PIECE; DISPOSABLE*)

ALL*

TEST	J	TEST DATA DOCUMENT
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Definition: THE SPECIFICATION, STANDARD, DRAWING, OR SIMILAR INSTRUMENT THAT SPECIFIES ENVIRONMENTAL AND PERFORMANCE REQUIREMENTS OR TEST CONDITIONS UNDER WHICH AN ITEM IS TESTED AND ESTABLISHES ACCEPTABLE LIMITS WITHIN WHICH THE ITEM MUST CONFORM IDENTIFIED BY AN ALPHABETIC AND/OR NUMERIC REFERENCE NUMBER. INCLUDES THE COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE OF THE ENTITY CONTROLLING THE INSTRUMENT.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the 5-position CAGE Code, a dash, and the document identification number.

(e.g., TESTJA12345-CWX654321*;

TESTJA1234A-654321\$\$JB5556A-663654*;

TESTJAA2345-654321\$JB55566-663654*)

REPLY
CODE

REPLY (AC28)

- | | |
|---|--|
| A | SPECIFICATION (Includes engineering type bulletins, brochures, etc., that reflect specification type data in specification format; excludes commercial catalogs, industry directories, and similar trade publications, reflecting general type data on certain environmental and performance requirements and test conditions that are shown as "typical," "average," "nominal," etc.) |
| B | STANDARD (Includes industry or association standards, individual manufacturer standards, etc.) |
| C | DRAWING (This is the basic governing drawing, such as a contractor drawing, original equipment manufacturer drawing, etc.; excludes any specification, standard, or other document that may be referenced in a basic governing drawing) |

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

ALL*

SPCL G SPECIAL TEST FEATURES

Definition: TEST CONDITIONS AND RATINGS, OR ENVIRONMENTAL AND PERFORMANCE REQUIREMENTS THAT ARE DIFFERENT, MORE CRITICAL, OR MORE SPECIFIC THAN THOSE SPECIFIED IN A GOVERNING TEST DATA DOCUMENT.

Reply Instructions: Enter the reply in clear text. (e.g., SPCLGSELECTED AND TESTED FOR NAVIGATIONAL SYSTEMS*)

ALL*

ZZZK J SPECIFICATION/STANDARD DATA

Definition: THE DOCUMENT DESIGNATOR OF THE SPECIFICATION OR STANDARD WHICH ESTABLISHED THE ITEM OF SUPPLY.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the Commercial and Government Entity (CAGE) Code of the entity controlling the document, a dash, and the document designator. The agency that controls the limited coordination document must be preceded and followed by a slash following the designator. The word canceled or superseded must be preceded and followed by a slash for the designator. Professional and industrial association specifications/standards are differentiated from a manufacturer's specification in that the data has been coordinated and published by the professional and industrial association. Include amendments and revisions where applicable.

(e.g., ZZZKJT81337-30642B*;

ZZZKJS81349-MIL-D-180 REV1/CANCELED/*;

ZZZKJP80205-NAS1103*;

ZZZKJS81349-MIL-C-1140C/CE/*;

ZZZKJT81337-30642B\$\$JP80205-NAS1103*)

REPLY
CODE

S
T

REPLY (AN62)

GOVERNMENT SPECIFICATION
GOVERNMENT STANDARD

FIIG A033
SECTION I

APP Key	MRC	Mode Code	Requirements
		D	MANUFACTURERS SOURCE CONTROL
		R	MANUFACTURERS SPECIFICATION
		N	MANUFACTURERS SPECIFICATION CONTROL
		M	MANUFACTURERS STANDARD
		B	NATIONAL STD/SPEC
		A	PROFESSIONAL/INDUSTRIAL ASSOCIATION SPECIFICATION
		P	PROFESSIONAL/INDUSTRIAL ASSOCIATION STANDARD

NOTE FOR MRC ZZZT: IF THE SPECIFICATION/STANDARD CITED IN REPLY TO MRC ZZZK IS NONDEFINITIVE, REPLY TO MRC ZZZT. THIS REPLY IS THE DATA WHICH IS NOT RECORDED IN SEGMENT C.

ALL* (See Note Above)

ZZZT J NONDEFINITIVE SPEC/STD DATA

Definition: THE NUMBER, LETTER, OR SYMBOL THAT INDICATES THE TYPE, STYLE, GRADE, CLASS, AND THE LIKE, OF AN ITEM IN A NONIDENTIFYING SPECIFICATION OR STANDARD.

Reply Instructions: Enter the applicable Reply Code from [Appendix A](#), Table 3, followed by the appropriate number, letter, or symbol. (e.g., ZZZTJTY1*; ZZZTJTY1\$JSTA*; ZZZTJTY1\$JSTA*)

ALL*

ZZZY G REFERENCE NUMBER DIFFERENTIATING
CHARACTERISTICS

Definition: A FEATURE OF THE ITEM OF SUPPLY WHICH MUST BE SPECIFICALLY RECORDED WHEN THE REFERENCE NUMBER COVERS A RANGE OF ITEMS.

Reply Instructions: Enter the reply in clear text. (e.g., ZZZYGCOLOR CODED LEADS*; ZZZYGAS DIFFERENTIATED BY MATERIAL*)

ALL*

CRTL A CRITICALITY CODE JUSTIFICATION

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SECTION I

APP Key	MRC	Mode Code	Requirements
------------	-----	--------------	--------------

Definition: THE MASTER REQUIREMENT CODES OF THOSE REQUIREMENTS WHICH ARE TECHNICALLY CRITICAL BY REASON OF TOLERANCE, FIT, PERFORMANCE, OR OTHER CHARACTERISTICS WHICH AFFECT IDENTIFICATION OF THE ITEM.

Reply Instructions: Enter the Master Requirement Code for the requirement, the reply to which renders the item as being critical. (e.g., CRTLAMATL*; CRTLAMATL\$\$ASURF*)

Reply to this requirement only if the header record for the item identification for the item being identified has been coded as critical.

NOTE FOR MRC PRPY: IF DOCUMENT AVAILABILITY CODE B, D, F, OR H, REPLY TO MRC PRPY.

ALL* (See Note Above)

PRPY	A	PROPRIETARY CHARACTERISTICS
------	---	-----------------------------

Definition: IDENTIFICATION OF THOSE CHARACTERISTICS INCLUDED IN THE DESCRIPTION FOR WHICH A NON-GOVERNMENT ACTIVITY HAS IDENTIFIED ALL OR SELECTED CHARACTERISTICS OF THE ITEM AS BEING PROPRIETARY AND THEREFORE RESTRICTED FROM RELEASE OUTSIDE THE GOVERNMENT WITHOUT PRIOR PERMISSION OF THE ORIGINATOR OF THE DATA.

Reply Instructions: Enter the MRC codes of the individual characteristics of the description which are marked proprietary on the technical data, using AND coding (\$\$) for multiple characteristics. If all the MRCs are proprietary, enter the reply PACS. If none of the MRCs is proprietary, enter the reply NPAC. (e.g., PRPYAPACS*; PRPYANPAC*; PRPYAMATL\$\$ASURF*)

ALL*

ELRN	G	EXTRA LONG REFERENCE NUMBER
------	---	-----------------------------

Definition: A REFERENCE NUMBER EXCEEDING 32 POSITIONS.

Reply Instructions: Enter the entire reference number. Do not include the 5-position Commercial and Government Entity (CAGE) Code unless there is more than one extra long reference number on the NSN, (e.g., ELRNGANN112036BIL060557LEN313605UZ62365*).

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SECTION I

APP Key	MRC	Mode Code	Requirements
<hr/>			
If there is more than one extra long reference number on the NSN, include the CAGE or NCAGE and separate each reference by using the "&" character, (e.g., 28480 ANN112036BIL060557LEN313605UZ62365 & S1234 NN112036BIL060557LEN313605UZ62365).			
In determining quantity of characters in the reference number, count will be made after modification in accordance with Volume 2, Chapter 9, FLIS Procedures Manual, DoD 4100.39-M.			
NOTE FOR MRC NHCF: IF THE CRITICALITY CODE IS E, H, OR M, REPLY TO MRC NHCF.			
ALL* (See Note Above)			
NHCF D NUCLEAR HARDNESS CRITICAL FEATURE			
Definition: AN INDICATION OF THE NUCLEAR HARDNESS CRITICALITY OF THE ITEM.			
Reply Instructions: Enter the Reply Code from the table below. (e.g., NHCFCY*)			
		<u>REPLY CODE</u> CY	<u>REPLY (AD05)</u> HARDENED

SECTION III

APP Key	MRC	Mode Code	Requirements
<hr/>			
ALL			
AKSL D PURPOSE FOR WHICH DESIGNED			
Definition: THE PURPOSE FOR WHICH THE ITEM IS DESIGNED.			
Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AKSLDAB*)			
		<u>REPLY CODE</u>	<u>REPLY (AG95)</u>

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SECTION I

APP

Key	MRC	Mode Code	Requirements
-----	-----	-----------	--------------

		AB	GENERAL
		AD	PART OF
		AC	SPECIFIC
		AE	USED WITH

ALL

AGAV	G	END ITEM IDENTIFICATION
------	---	-------------------------

Definition: THE NATIONAL STOCK NUMBER OR THE IDENTIFICATION INFORMATION OF THE END EQUIPMENT FOR WHICH THE ITEM IS A PART.

Reply Instructions: Enter the reply in clear text.

(e.g., AGAVG3930-00-000-0000*;

AGAVGFORKLIFT TRUCK, SMITH CORPORATION, MODEL 12, TYPE A*)

ALL *

CXCY	G	PART NAME ASSIGNED BY CONTROLLING AGENCY
------	---	--

Definition: THE NAME ASSIGNED TO THE ITEM BY THE GOVERNMENT AGENCY OR COMMERCIAL ORGANIZATION CONTROLLING THE DESIGN OF THE ITEM.

Reply Instructions: Enter the reply in clear text. (e.g., CXCYGLINE PROCESSOR CONTROL BOARD*)

ALL

CBME	J	CUBIC MEASURE
------	---	---------------

Definition: A MEASUREMENT OF VOLUME TAKEN BY MULTIPLYING THE LENGTH BY THE WIDTH BY THE HEIGHT OF AN ITEM AND RENDERED IN CUBIC INCHES.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., CBMEJCN8.000*; CBMEJCC131.1*)

<u>REPLY CODE</u>	<u>REPLY (AN76)</u>
CC	CUBIC CENTIMETERS
CN	CUBIC INCHES

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SECTION I

APP			
Key	MRC	Mode Code	Requirements

ALL

AFJN D FRAGILITY FACTOR

Definition: THE MEASURE OF SENSITIVITY OF THE ITEM TO BE PACKAGED. A FACTOR USED BY PACKAGING ENGINEERS IN DEVISING PROPER CUSHIONING IN A PACKAGE.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AFJNDF*)

<u>REPLY CODE</u>	<u>REPLY (AD40)</u>
D	DELICATE
B	EXTREMELY FRAGILE
E	MODERATELY DELICATE
F	MODERATELY RUGGED
G	RUGGED

ALL

BBRG D STORAGE TYPE

Definition: INDICATES THE TYPE OF STORAGE SPACE REQUIRED FOR AN ITEM IN ORDER TO PROVIDE THE DEGREE OF PROTECTION NECESSARY TO MAINTAIN SERVICEABILITY STANDARDS.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., BBRGDAC*)

<u>REPLY CODE</u>	<u>REPLY (AM81)</u>
AC	CLOSED SHED
AD	CONTROLLED HUMIDITY WAREHOUSE
AM	DEHUMIDIFIED WAREHOUSE
AE	GENERAL PURPOSE WAREHOUSE
AN	HEATED WAREHOUSE
AH	OPEN SHED
AL	TEMPERATURE CONTROLLED WAREHOUSE
AJ	UNHEATED WAREHOUSE

ALL

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SECTION I

APP

Key	MRC	Mode Code	Requirements
-----	-----	-----------	--------------

AFRG	D	CONTACT MATERIAL
------	---	------------------

Definition: THE ELEMENT, COMPOUND, OR MIXTURE OF WHICH THE CONTACT(S) IS FABRICATED, EXCLUDING ANY SURFACE TREATMENT.

Reply Instructions: Enter the applicable Reply Code from [Appendix A](#), Table 5. (e.g., AFRGDST0000*; AFRGDNF0000\$\$DSTB000*; AFRGDNF0000\$DSTB000*)

ALL

AFRH	D	CONTACT SURFACE TREATMENT
------	---	---------------------------

Definition: CONSISTS OF PLATING, DIP, AND/OR COATING THAT CANNOT BE WIPE OFF. PLATING AND/OR COATING IS ANY CHEMICAL AND/OR METALLIC ADDITIVE, ELECTROCHEMICAL, OR MILD MECHANICAL PROCESS WHICH PROTECTS THE CONTACT SURFACE.

Reply Instructions: Enter the applicable Reply Code from [Appendix A](#), Table 6. (e.g., AFRHDAU0000*; AFRHDAU0000\$\$DAUC000*; AFRHDAU0000\$DAUC000*)

ALL

ADTV	D	CASE MATERIAL
------	---	---------------

Definition: THE ELEMENT, COMPOUND, OR MIXTURE OF WHICH THE CASE IS FABRICATED, EXCLUDING ANY SURFACE TREATMENT.

Reply Instructions: Enter the applicable Reply Code from [Appendix A](#), Table 5. (e.g., ADTVDAL0000*; ADTVDAL0000\$\$DPC0000*; ADTVDAL0000\$DPC0000*)

ALL

PRMT	D	PRECIOUS MATERIAL
------	---	-------------------

Definition: IDENTIFICATION OF THE PRECIOUS MATERIAL CONTAINED IN THE ITEM.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., PRMTDAGA000*; PRMTDAUA000\$\$DAGA000*; PRMTDAGA000\$DAUA000*)

REPLY CODE

AUA000
IRA000
AZA000
PDA000
PTA000

REPLY (MA01)

GOLD
IRIDIUM
OSMIUM
PALLADIUM
PLATINUM

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SECTION I

APP

Key	MRC	Mode Code	Requirements
		RHA000	RHODIUM
		RTA000	RUTHENIUM
		AGA000	SILVER

ALL

PMWT J PRECIOUS MATERIAL AND WEIGHT

Definition: AN INDICATION OF THE PRECIOUS MATERIAL CONTAINED IN THE ITEM, AND THE AMOUNT PER A MEASUREMENT SCALE.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., PMWTJPTA000R0.780*;
PMWTJAUA000F0.500\$JAGA000R0.780*;
PMWTJAUA000F0.500\$JAGA000R0.780*)

Table 1

<u>REPLY CODE</u>	<u>REPLY (MA01)</u>
AUA000	GOLD
IRA000	IRIDIUM
AZA000	OSMIUM
PDA000	PALLADIUM
PTA000	PLATINUM
RHA000	RHODIUM
RTA000	RUTHENIUM
AGA000	SILVER

Table 2

<u>REPLY CODE</u>	<u>REPLY (AG14)</u>
E	GRAINS, TROY
R	GRAMS
F	OUNCES, TROY

ALL

PMLC J PRECIOUS MATERIAL AND LOCATION

Definition: AN INDICATION OF THE PRECIOUS MATERIAL AND ITS LOCATION IN THE ITEM.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the location in clear text. (e.g., PMLCJAUA000TERMINALS*;
PMLCJAUA000TERMINALS\$\$JAGA000INTERNAL SURFACES*;
PMLCJAGA000TERMINALS\$JAUA000INTERNAL SURFACES*)

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SECTION I

APP Key	MRC	Mode Code	Requirements
<u>REPLY CODE</u>			<u>REPLY (MA01)</u>
		AUA000	GOLD
		IRA000	IRIDIUM
		AZA000	OSMIUM
		PDA000	PALLADIUM
		PTA000	PLATINUM
		RHA000	RHODIUM
		RTA000	RUTHENIUM
		AGA000	SILVER

Reply Tables

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Table 1 - ENVIRONMENTAL PROTECTIONS
ENVIRONMENTAL PROTECTIONS

<u>REPLY CODE</u>	<u>REPLY (AA65)</u>
ADC	AIRTIGHT
ACB	COLD RESISTANT
ACY	CORROSION PROOF
AAC	CORROSION RESISTANT
AAD	DRIPPROOF
ACZ	DUST TIGHT
AAE	DUSTPROOF
ADA	EROSION PROOF
AAG	EXPLOSION PROOF
AAJ	FIRE RESISTANT
AAM	FUNGUS PROOF
AAN	FUNGUS RESISTANT
AAP	HEAT RESISTANT
ADB	HERMETIC
ABP	HUMIDITY PROOF
AAR	HUMIDITY RESISTANT
ABQ	SALT SPRAY RESISTANT
ABA	SALT WATER RESISTANT
ABB	SAND PROOF
ABD	SHOCK PROOF
ABE	SHOCK RESISTANT
ABR	SPLASH PROOF
ABT	SPRAY TIGHT
ABW	SUBMERSIBLE
ABH	VIBRATION PROOF
ABJ	VIBRATION RESISTANT
ACM	WATER RESISTANT
ABL	WATERTIGHT
ADD	WINDPROOF

Table 2 - MOUNTING FACILITY TYPES
MOUNTING FACILITY TYPES

<u>REPLY CODE</u>	<u>REPLY (AM39)</u>
<i>BDH</i>	<i>ADHESIVE</i>
ABC	BRACKET
ABH	CLAMP (includes clip type)
AEC	CLINCH NUT
AMF	COUPLING RING (includes coupling nut)
BRP	ELECTRICAL PLUG CONNECTOR
AKX	PLUG-IN TERMINAL
BRQ	PRINTED CIRCUIT TERMINAL
BCX	SLOTTED HOLE
ACD	TERMINAL
AFA	THREADED BUSHING
AHF	THREADED HOLE (includes captive nuts)
AET	THREADED STUD (includes captive screw)
ACQ	UNTHREADED HOLE
AEW	UNTHREADED STUD

Table 3 - NONDEFINITIVE SPEC/STD DATA
NONDEFINITIVE SPEC/STD DATA

<u>REPLY CODE</u>	<u>REPLY (AD08)</u>
AL	ALLOY
AN	ANNEX
AP	APPENDIX
AC	APPLICABILITY CLASS
AR	ARRANGEMENT
AS	ASSEMBLY
AB	ASSORTMENT
BX	BOX
CY	CAPACITY
CA	CASE
CT	CATEGORY
CL	CLASS
CE	CODE
CR	COLOR
CC	COMBINATION CODE
CN	COMPONENT
CP	COMPOSITION
CM	COMPOUND
CD	CONDITION
CS	CONSTRUCTION
DE	DESIGN
DG	DESIGNATOR

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<u>REPLY CODE</u>	<u>REPLY (AD08)</u>
DW	DRAWING NUMBER
EG	EDGE
EN	END
FY	FAMILY
FG	FIGURE
FN	FINISH
FM	FORM
FA	FORMULA
GR	GRADE
GP	GROUP
BA	IMAGE COLOR
NS	INSERT
TM	ITEM
KD	KIND
KT	KIT
LG	LENGTH
LT	LIMIT
MK	MARK
AA	MARKER
ML	MATERIAL
BB	MAXIMUM DENSITY
MH	MESH
ME	METHOD
BC	MINIMUM
MD	MODEL
MT	MOUNTING
NR	NUMBER
PT	PART
PN	PATTERN
PC	PHYSICAL CONDITION
PS	PIECE
PL	PLAN
PR	POINT
QA	QUALITY
RN	RANGE
RT	RATING
RF	REFERENCE NUMBER
SC	SCHEDULE
SB	SECTION
SL	SELECTION
SE	SERIES
SV	SERVICE
SX	SET
SA	SHADE
SH	SHAPE
SG	SHEET
SZ	SIZE
PZ	SPECIES

<u>REPLY CODE</u>	<u>REPLY (AD08)</u>
SQ	SPECIFICATION SHEET
SD	SPEED
ST	STYLE
SS	SUBCLASS
SF	SUBFORM
SP	SUBTYPE
SN	SURFACE CONDITION
SY	SYMBOL
SM	SYSTEM
TB	TABLE
TN	TANNAGE
TP	TEMPER
TX	TEXTURE
TK	THICKNESS
TT	TREATMENT
TR	TRIM
TY	TYPE
YN	UNIT
VA	VARIETY
WT	WEIGHT
WD	WIDTH

Table 4 - TERMINAL TYPES
TERMINAL TYPES

<u>REPLY CODE</u>	<u>REPLY (AN89)</u>
AAB	BANANA PLUG
ABL	BINDING POST
AEM	BUS BAR
ACN	CONNECTOR, PLUG
AAF	CONNECTOR, RECEPTACLE
AAM	PIN
ACR	PRINTED CIRCUIT
ADA	QUICK DISCONNECT, FEMALE
ACZ	QUICK DISCONNECT, MALE
ABQ	SCREW
AAS	SOLDER STUD
AAT	STANDARD TUBE BASE
ABB	TAB, SOLDER LUG
ABX	TAB W/SCREW
ABD	THREADED STUD
ACB	TURRET
ACM	WIRE HOOK
ACC	WIRE LEAD
ACD	WIRE LOOP

Table 5 - MATERIALS
MATERIALS

<u>REPLY CODE</u>	<u>REPLY (AD09)</u>
AL0000	ALUMINUM ALLOY
BC0000	BERYLLIUM COPPER
BR0000	BRASS
BN0000	BRONZE
BM0000	BRONZE MANGANESE
CU0000	COPPER
GS0000	GLASS
AU0000	GOLD
GF0000	GRAPHITE
RR0000	IRIDIUM
ME0000	METAL
MA0000	MOLYBDENUM
NF0000	NICKEL
PC0000	PLASTIC
PT0000	PLATINUM
RH0000	RHODIUM
AG0000	SILVER
STB000	STEEL, CORROSION RESISTING
TN0000	TUNGSTEN

Table 6 - SURFACE TREATMENTS
SURFACE TREATMENTS

<u>REPLY CODE</u>	<u>REPLY (AD09)</u>
AN0000	ANODIZED
CDR000	CADMIUM PLATED
CRA000	CHROMIUM PLATED
CUN000	COPPER PLATED
EN0000	ENAMEL
AU0000	GOLD
AUC000	GOLD FLASH
PS0000	PASSIVATED
RHC000	RHODIUM FLASHED
RHA000	RHODIUM PLATED
AGB000	SILVER FLASH
AGE000	SILVER PLATED
SJA000	SOLDER DIP
SNF000	TIN PLATED

Table 7 - MOUNTING PATTERNS
MOUNTING PATTERNS

<u>REPLY CODE</u>	<u>REPLY (AD96)</u>
-------------------	---------------------

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APPENDIX A

<u>REPLY CODE</u>	<u>REPLY (AD96)</u>
CH	CIRCULAR
CJ	DIAGONAL
CK	DIAMOND
CL	IN-LINE
CC	IRREGULARLY SPACED
CM	RECTANGULAR
CN	TRIANGLE

Reference Drawing Groups

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REFERENCE DRAWING GROUP C	54
REFERENCE DRAWING GROUP D	55
REFERENCE DRAWING GROUP E Tables.....	57
REFERENCE DRAWING GROUP E	58

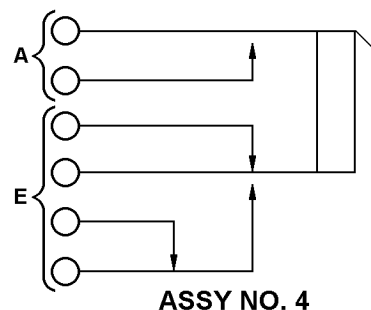
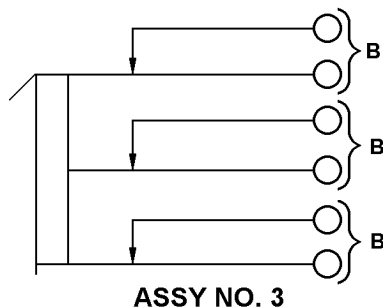
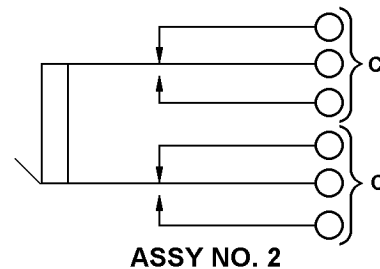
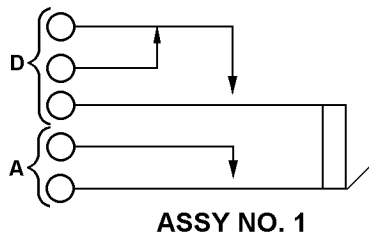
REFERENCE DRAWING GROUP A

PILE-UP CONTACT FORMS

(No Requirements)

In the commercial field, all contact arrangements for pile-up switches have been resolved into combinations of basic forms A through M as illustrated below. When recording the contact arrangement of a pile-up assembly, the following procedure will be followed:

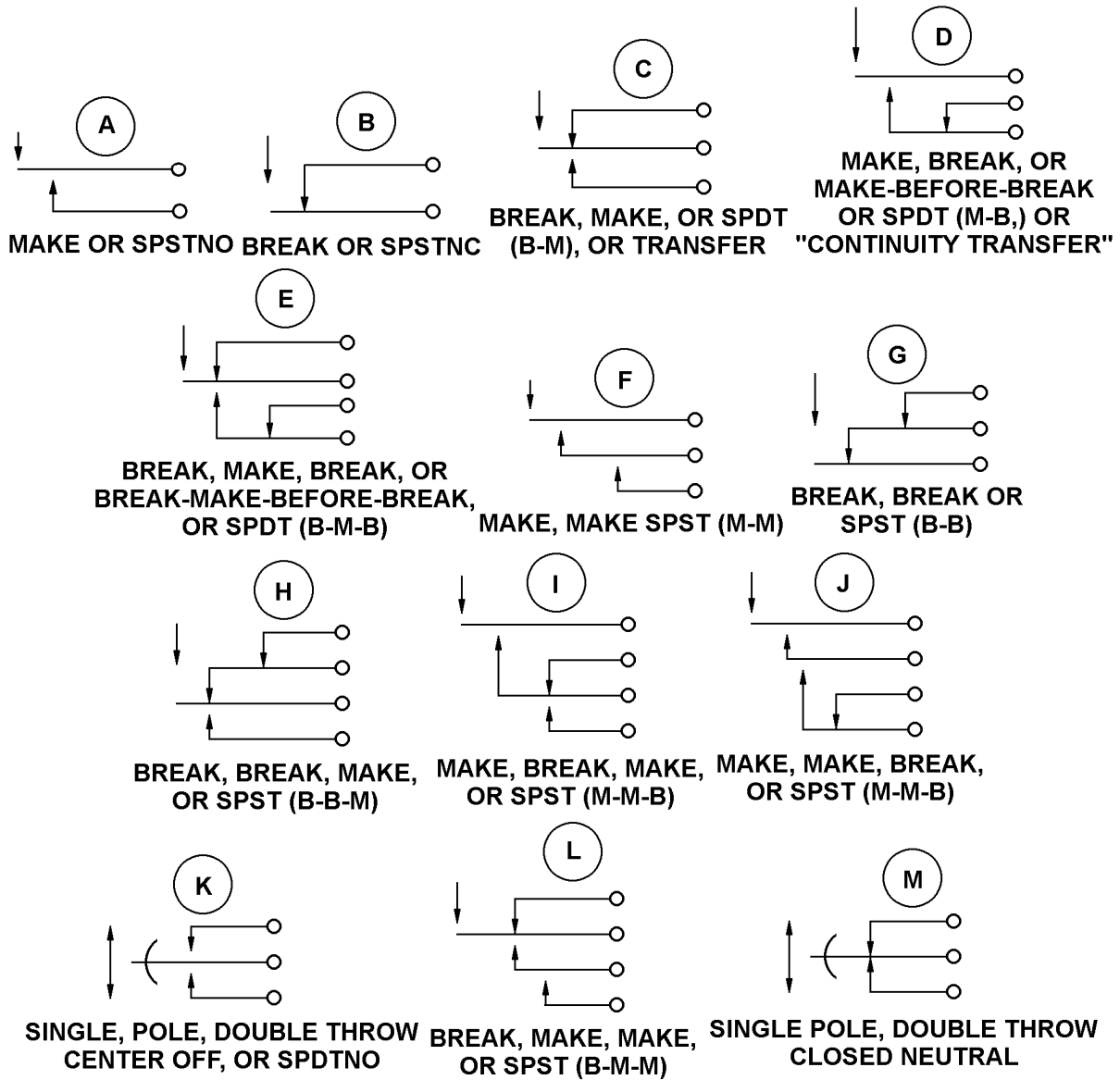
- a. Determine the number of pile-up assemblies involved. (An assembly consists of a number of spring leaves mounted on a common pillar to form a combination of switching arrangements actuated simultaneously by a single contact transfer rod.)
- b. Determine from the illustration of the basic forms, the type and quantity of each basic form used to make up each pile-up contact assembly. Record in order of assemblage, i.e., from the heelpiece or frame in physical ascendance regardless of numeric or alphabetic order, consolidating identical basic forms only to the extent that they are in consecutive order of assemblage. (e.g., 2C1A; 1C1A1C).



When recording pile-up contact form arrangements, the reply will consist of the master requirement code, the mode code, the quantity, and type of pile-up form. (e.g., AYSCA1A*).

For items consisting of two or more pile-up assemblies, use the AND (\$) symbol. For example, if an item consists of four pile-up assemblies such as those shown in the illustration above, the replies would be AYSCA1A1D\$\$A2C\$\$A3B\$\$A1A1E*.

(All contact forms are momentary action and are shown in the normal unactuated position. The heavy arrow indicates the direction of operation.)



REFERENCE DRAWING GROUP B

NONPILE-UP CONTACT FORMS

(No Requirements)

1. The single and double throw schematics (Reply Codes AA through AQ) represent single pole items only. The reply for contact arrangement designation shall consist of the applicable reply code, followed by the number of poles (e.g., for a double pole, single throw, normally open, momentary action, enter reply as CRNGJAD2*; for a single pole, single throw, normally closed, momentary action, enter as CRNGJAF1*).
2. The schematics for the two circuit arrangements (Reply Codes AS through AY) represent the basic form. The reply for contact arrangement shall consist of the applicable reply code followed by the number of basic forms (e.g., for a single two circuit arrangement with both positions maintained, enter reply as CRNGJAS1*; for an arrangement consisting of two, two circuit, one position momentary, enter reply as CRNGJAV2*).
3. Contact arrangements having momentary action are shown in the normal position.
4. For items with two or more different contact arrangements, use the AND (\$\$) symbol and enter in reply code sequence (e.g., CRNGJAD1\$\$JAQ1*).

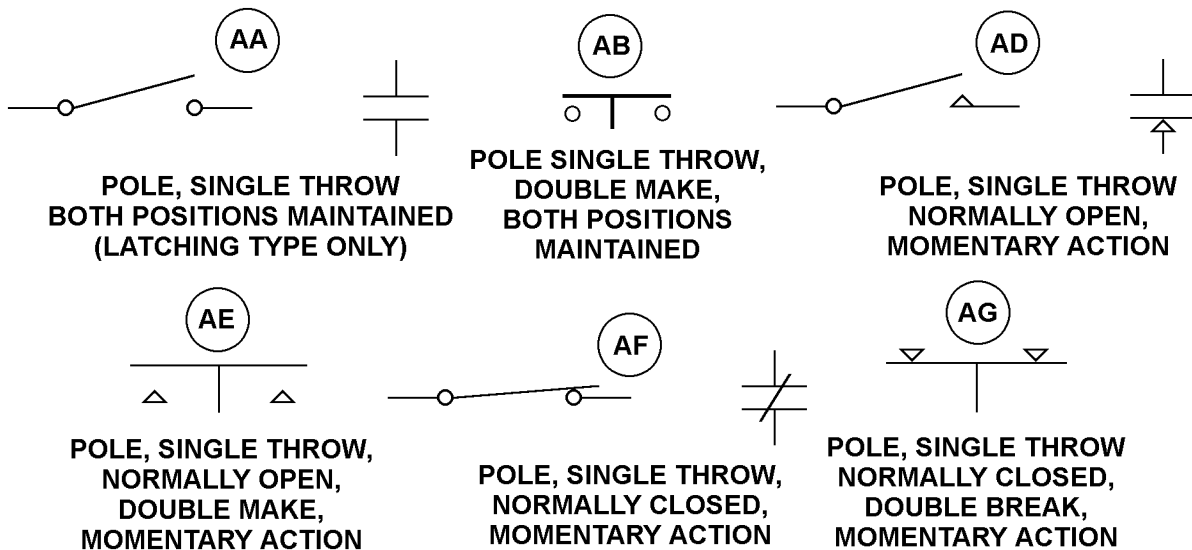
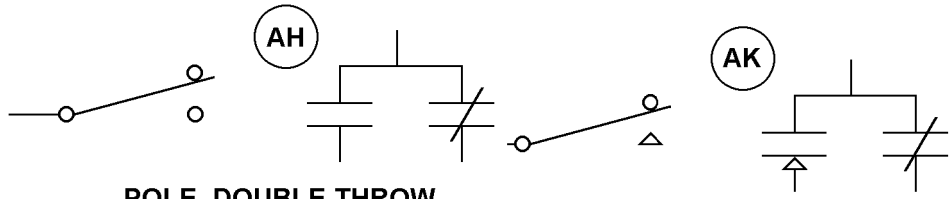
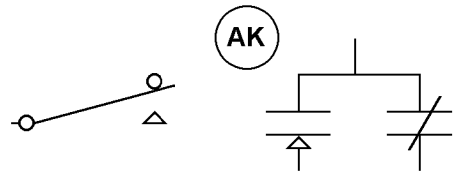


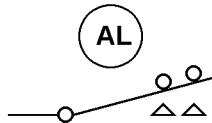
FIG A033
APPENDIX B



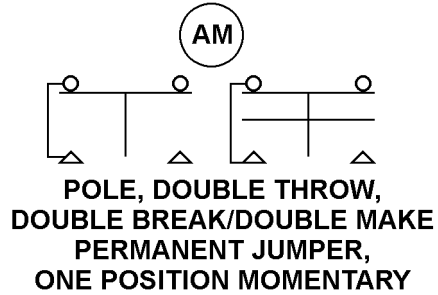
**POLE, DOUBLE THROW
BOTH POSITIONS MAINTAINED
(LATCHING TYPE ONLY)**



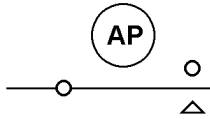
**POLE, DOUBLE THROW,
ONE POSITION MOMENTARY**



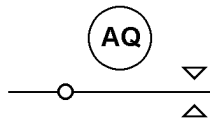
**POLE, DOUBLE THROW,
DOUBLE BREAK/DOUBLE MAKE,
ONE POSITION MOMENTARY**



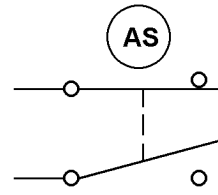
**POLE, DOUBLE THROW,
DOUBLE BREAK/DOUBLE MAKE
PERMANENT JUMPER,
ONE POSITION MOMENTARY**



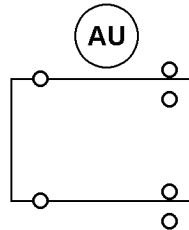
**POLE, DOUBLE THROW,
ONE POSITION MOMENTARY,
TWO POSITIONS MAINTAINED**



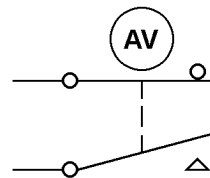
**POLE, DOUBLE THROW,
TWO POSITIONS MOMENTARY**



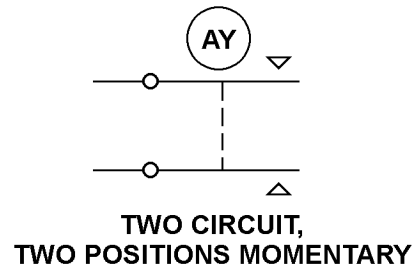
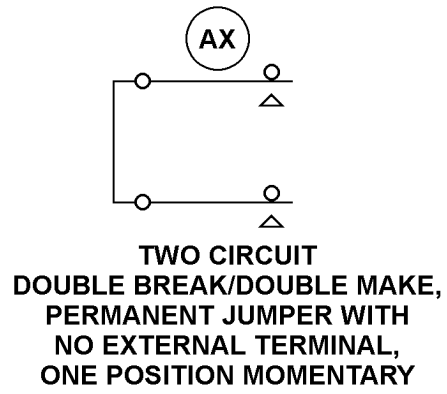
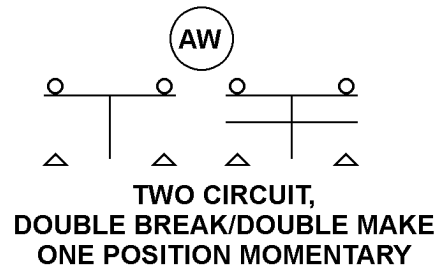
**TWO CIRCUIT,
BOTH POSITIONS MAINTAINED**



**TWO CIRCUIT,
DOUBLE BREAK/DOUBLE MAKE,
PERMANENT JUMPER WITH
NO EXTERNAL TERMINAL,
BOTH POSITIONS MAINTAINED**



**TWO CIRCUIT,
ONE POSITION MOMENTARY**

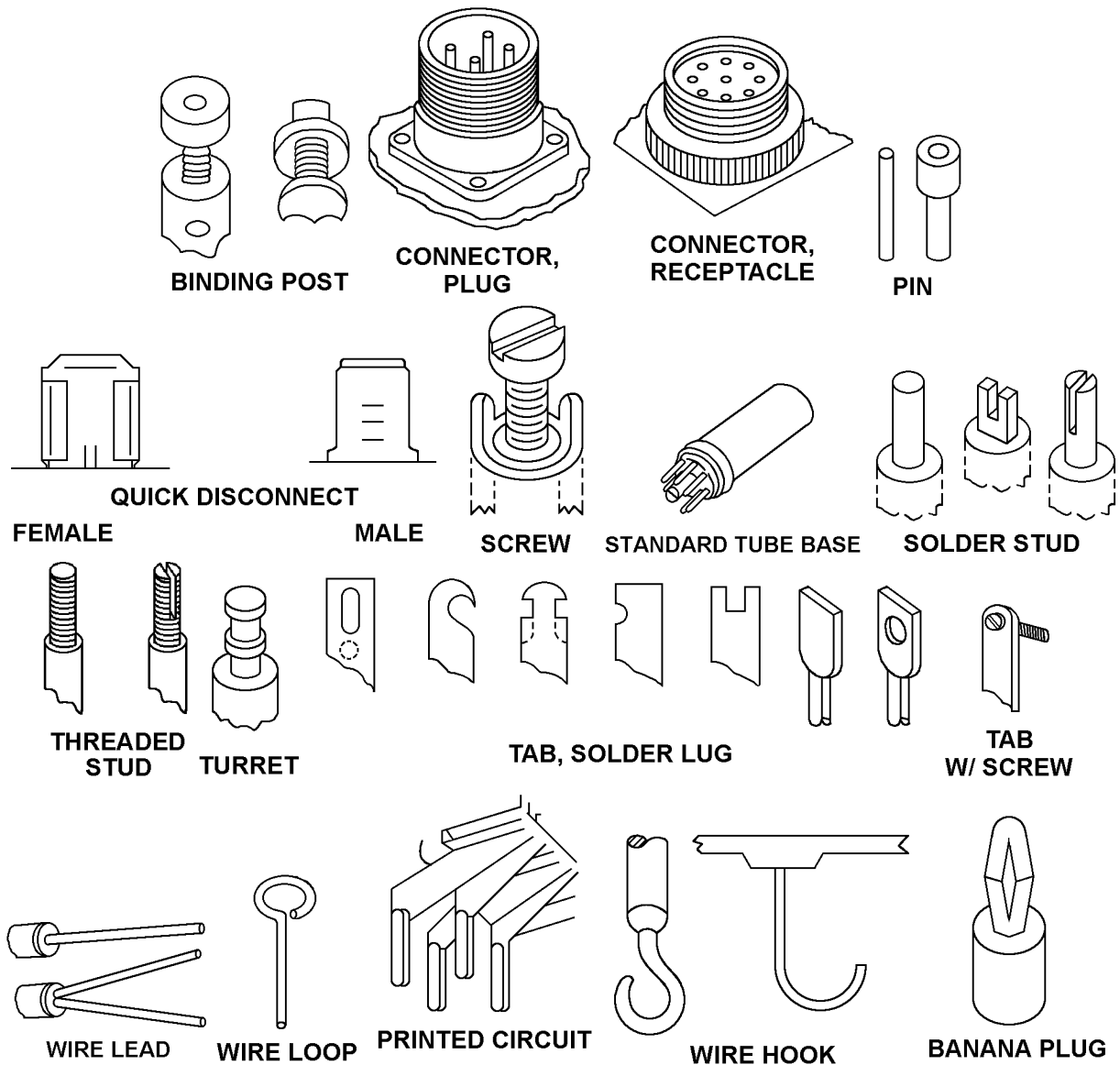


REFERENCE DRAWING GROUP C

TERMINAL TYPES

(No Requirements)

(Reference Only)



REFERENCE DRAWING GROUP D

MOUNTING PATTERNS

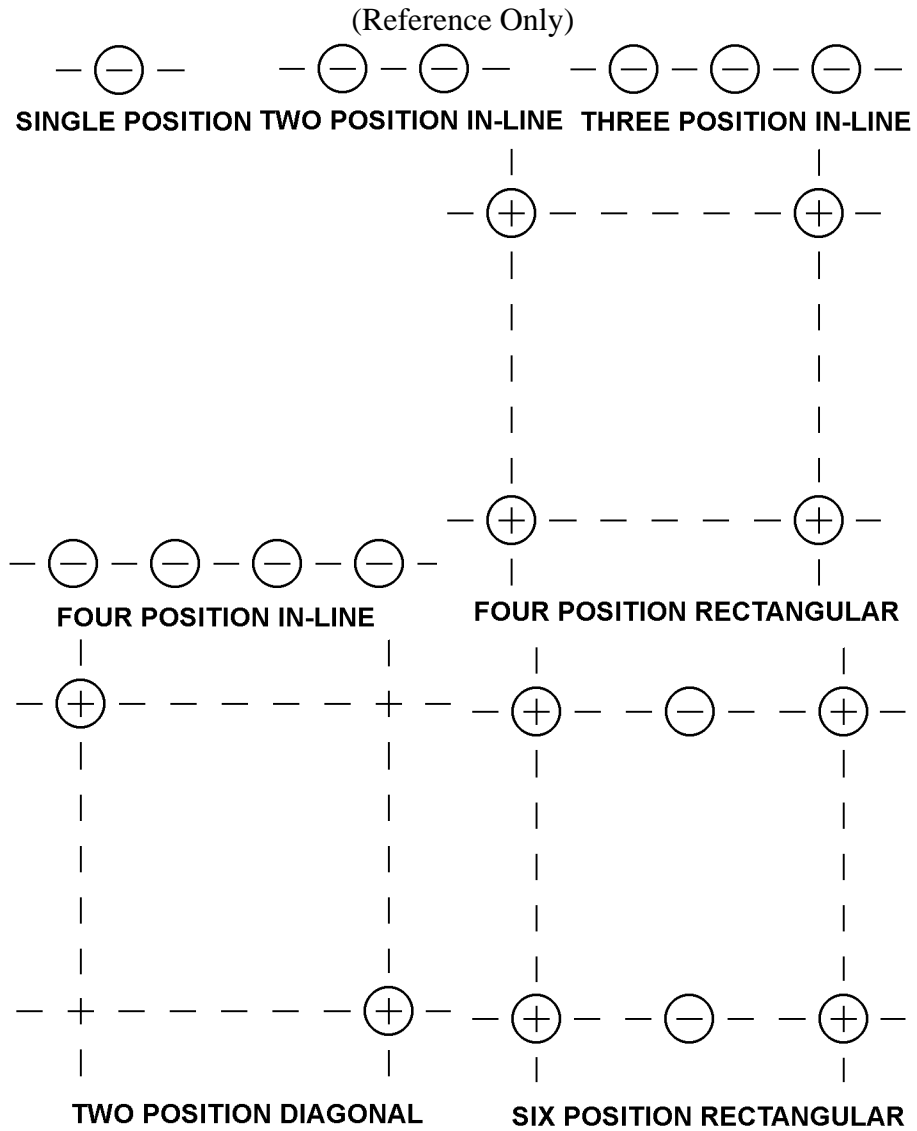
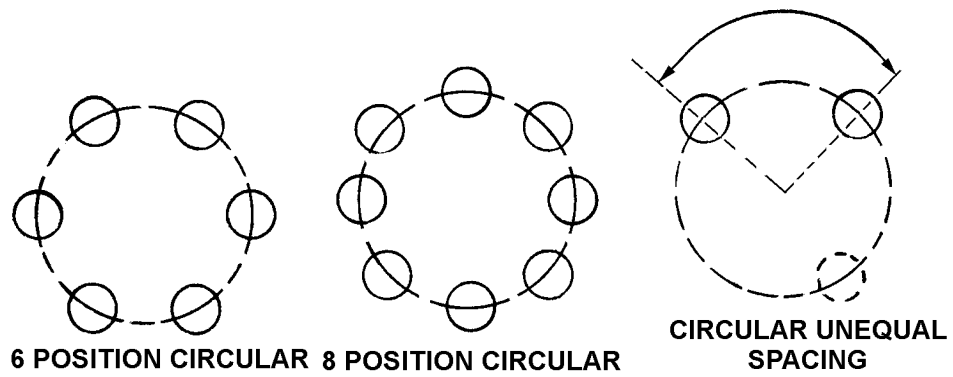
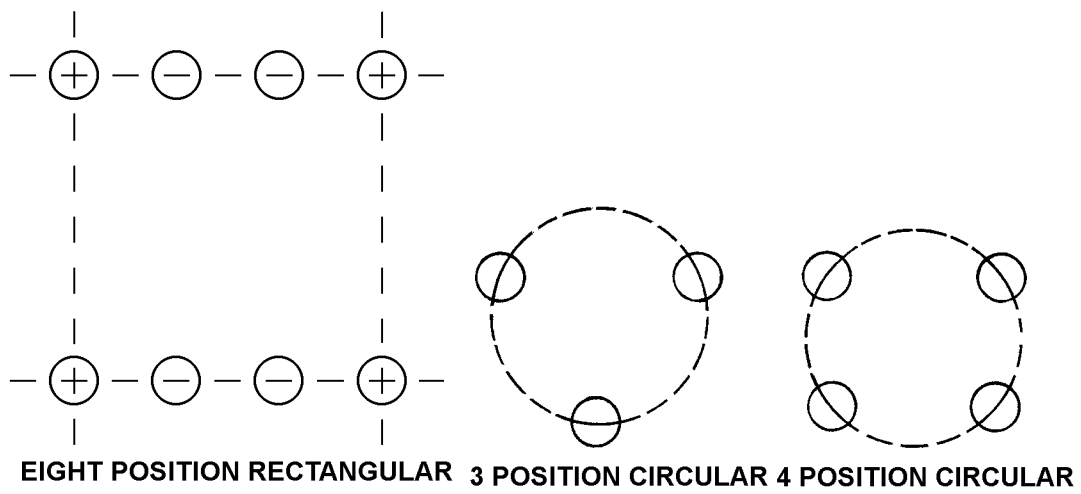
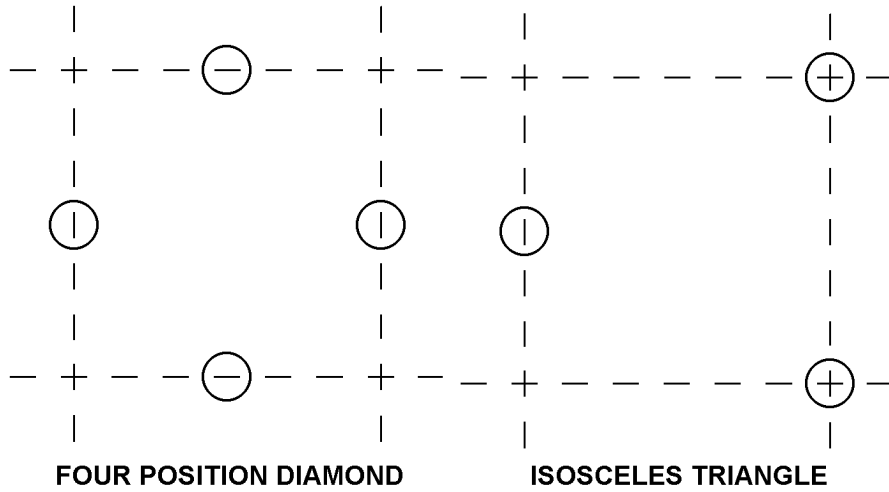


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APPENDIX B



REFERENCE DRAWING GROUP E Tables
STANDARDIZED DIMENSION INSTRUCTIONS

Item with Single Mounting Surfaces:

ILLUSTRATION NUMBER 1 indicates the surfaces from which the dimensions are taken when a noncylindrical item has a Single Mounting Surface.

Items with Two or More Mounting Surfaces:

For an item other than cylindrical shape having more than one mounting surface. Dimensions will be recorded as follows: 1. The greatest dimension on a mounting surface is length, ABHP.2. The intermediate dimension on a mounting surface is width, ABMK.3. The smallest dimension is height, ABKW.

Items Without a Reference Mounting Surface:

For an item other than cylindrical shape for which the mounting surface cannot be determined. Dimensions will be recorded as follows: 1. The greatest dimension is length, ABHP.2. The intermediate dimension is width, ABMK.3. The smallest dimension is height, ABKW.

Cylindrical Items:

Cylindrical shape item dimensions will be recorded as length and diameter, ABHP and ADAV.

Mounting Dimensions:

ILLUSTRATION NUMBER 1 also indicates the mounting dimensions in relationship to length, width, and height; ABKQ, ABKR, and ABKW.

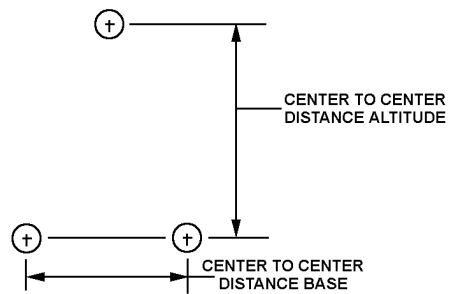
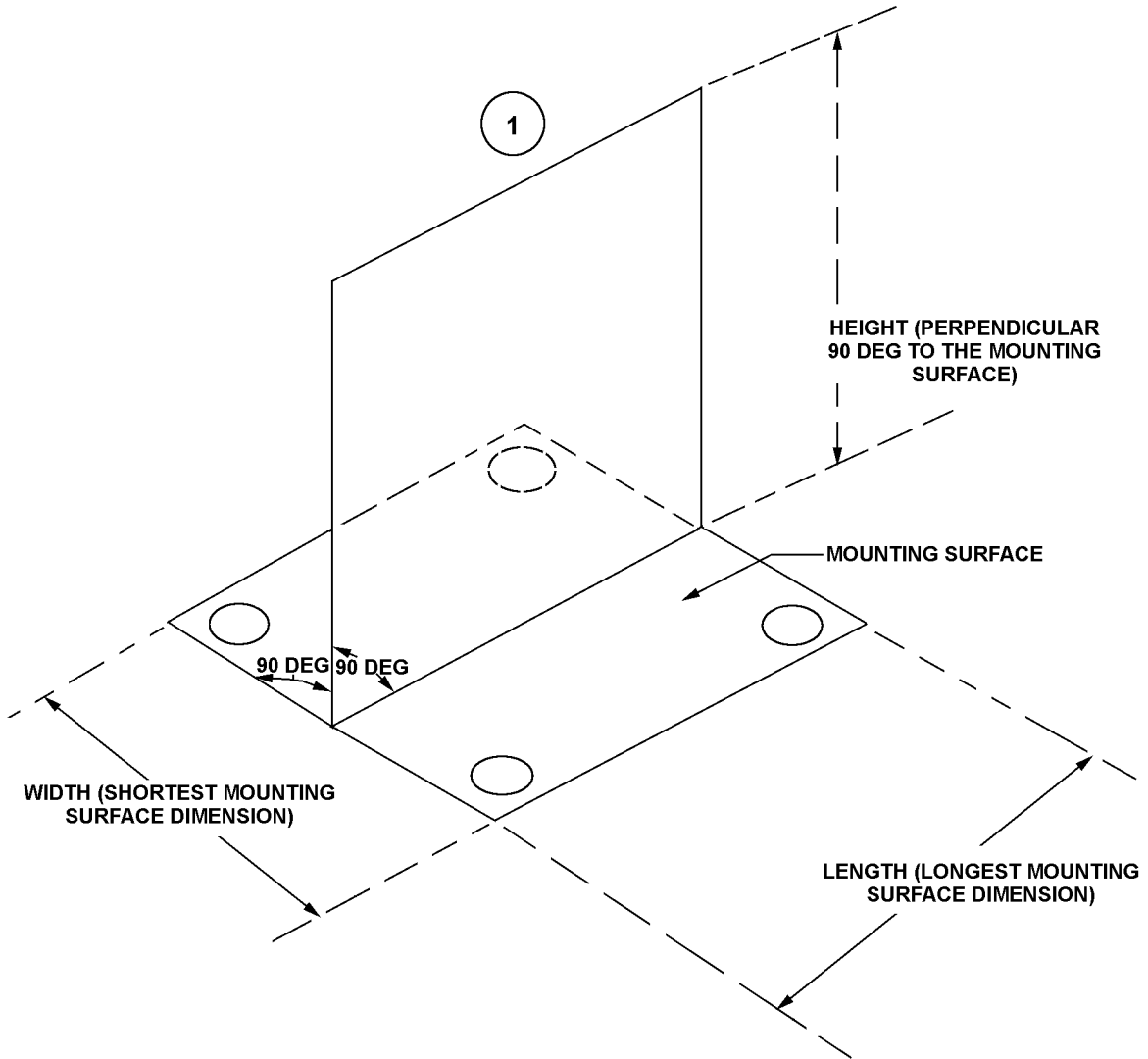
ILLUSTRATION NUMBER 2 indicates the mounting dimensions in relationship to the altitude of an isosceles triangle, CSQJ.

REFERENCE DRAWING GROUP E

STANDARDIZED DIMENSION INSTRUCTIONS

ILLUSTRATION BELOW INDICATES THE POINT AT WHICH DIMENSIONS WILL BE
DETERMINED WHEN ITEM HAS A SINGLE MOUNTING SURFACE

FIG A033
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ISOSCELES TRIANGLE

Technical Data Tables

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RESONANT REED FREQUENCY IDENTIFIED SECONDARY ADDRESS CODING

<u>REPLY CODE</u>	<u>REPLY</u>
1Z	ALL REEDS
1X	SINGLE REED
1A	1ST REED
1B	2ND REED
1C	3RD REED
1D	4TH REED
1E	5TH REED
1F	6TH REED
1G	7TH REED
1H	8TH REED

LOAD CONDITION IDENTIFIED SECONDARY ADDRESS CODING

<u>REPLY CODE</u>	<u>REPLY</u>
1B	INDUCTIVE LOAD
1C	LAMP LOAD
1D	MOTOR LOAD
1A	RESISTIVE LOAD

WINDING IDENTIFIED SECONDARY ADDRESS CODING

<u>REPLY CODE</u>	<u>REPLY</u>
1X	ALL WINDINGS
1A	FIRST WINDING
1D	FOURTH WINDING
1B	SECOND WINDING
1Z	SINGLE WINDING
1C	THIRD WINDING

TERMINAL FUNCTION IDENTIFIED SECONDARY ADDRESS CODING

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<u>REPLY CODE</u>	<u>REPLY</u>
1X	ALL FUNCTIONS
1B	CONTACTS
1F	CONTACTS AND GROUND (includes shield)
1G	DUMMY
1A	ENERGIZING ELEMENT
1D	ENERGIZING ELEMENT AND CONTACTS
1E	ENERGIZING ELEMENT AND GROUND (includes shield)
1C	GROUND (includes shield)

TIME DELAY IDENTIFIED SECONDARY ADDRESS CODING

<u>REPLY CODE</u>	<u>REPLY</u>
1F	ADJUSTABLE OPERATE AND RELEASE TIME
1D	ADJUSTABLE OPERATE TIME
1E	ADJUSTABLE RELEASE TIME
1C	FIXED OPERATE AND RELEASE TIME
1A	FIXED OPERATE TIME
1B	FIXED RELEASE TIME

MOUNTING FACILITY IDENTIFIED SECONDARY ADDRESS CODING

<u>REPLY CODE</u>	<u>REPLY</u>
1A	FIRST MOUNTING FACILITY
1D	FOURTH MOUNTING FACILITY
1B	SECOND MOUNTING FACILITY
1X	SINGLE MOUNTING FACILITY
1C	THIRD MOUNTING FACILITY

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STANDARD FRACTION TO DECIMAL CONVERSION CHART

<u>4ths</u>	<u>8ths</u>	<u>16ths</u>	<u>32nds</u>	<u>64ths</u>	<u>To 3</u>	<u>To 4</u>	<u>4ths</u>	<u>8ths</u>	<u>16ths</u>	<u>32nds</u>	<u>64ths</u>	<u>To 3</u>	<u>To 4</u>
				1/64	.016	.0156					33/64	.516	.5156
			1/32	-----	.031	.0312				17/32	-----	.531	.5312
				3/64	.047	.0469					35/64	.547	.5469
		1/16	-----		.062	.0625			9/16	-----	-----	.562	.5625
				5/64	.078	.0781					37/64	.578	.5781
			3/32	-----	.094	.0938				19/32	-----	.594	.5938
				7/64	.109	.1094					39/64	.609	.6094
	1/8	-----	-----	-----	.125	.1250		5/8	-----	-----	-----	.625	.6250
				9/64	.141	.1406					41/64	.641	.6406
			5/32	-----	.156	.1562				21/32	-----	.656	.6562
				11/64	.172	.1719					43/64	.672	.6719
		3/16	-----	-----	.188	.1875			11/16	-----	-----	.688	.6875
				13/64	.203	.2031					45/64	.703	.7031
			7/32	-----	.219	.2188				23/32	-----	.719	.7188
				15/64	.234	.2344					47/64	.734	.7344
1/4	-----	-----	-----	-----	.250	.2500	3/4	-----	-----	-----	-----	.750	.7500
				17/64	.266	.2656					49/64	.766	.7656
			9/32	-----	.281	.2812				25/32	-----	.781	.7812
				19/64	.297	.2969					51/64	.797	.7969
		5/16	-----	-----	.312	.3125			13/16	-----	-----	.812	.8125
				21/64	.328	.3281					53/64	.828	.8281
			11/32	-----	.344	.3438				27/32	-----	.844	.8438
				23/64	.359	.3594					55/64	.859	.8594
	3/8	-----	-----	-----	.375	.3750		7/8	-----	-----	-----	.875	.8750
				25/64	.391	.3906					57/64	.891	.8906
			13/32	-----	.406	.4062				29/32	-----	.906	.9062
				27/64	.422	.4219					59/64	.922	.9219
		7/16	-----	-----	.438	.4375			15/16	-----	-----	.938	.9375
				29/64	.453	.4531					61/64	.953	.9531
			15/32	-----	.469	.4688				31/32	-----	.969	.9688
				31/64	.484	.4844					63/64	.984	.9844
					.500	.5000						1.000	1.0000

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METRIC CONVERSION CHART

<u>ORIGINAL VALUE</u>		<u>DESIRED VALUE</u>															
<u>Pref</u> <u>ix</u>		<u>Ter</u> <u>a</u>	<u>Gi</u> <u>ga</u>	<u>Me</u> <u>ga</u>	<u>My</u> <u>ria</u>	<u>Kil</u> <u>o</u>	<u>Hec</u> <u>to</u>	<u>De</u> <u>ke</u>	<u>*U</u> <u>nit</u>	<u>De</u> <u>ci</u>	<u>Ce</u> <u>nti</u>	<u>Mil</u> <u>li</u>	<u>Mic</u> <u>ro</u>	<u>Na</u> <u>no</u>	<u>Pic</u> <u>o</u>	<u>Fem</u> <u>to</u>	<u>Att</u> <u>o</u>
	<u>Pow</u> <u>er</u> <u>of</u> <u>10</u>	<u>10</u> <u>12</u>	<u>10</u> <u>9</u>	<u>106</u>	<u>104</u>	<u>10</u> <u>3</u>	<u>102</u>	<u>101</u>	<u>100</u>	<u>10-</u> <u>1</u>	<u>10-</u> <u>2</u>	<u>10-</u> <u>3</u>	<u>10-</u> <u>6</u>	<u>10-</u> <u>9</u>	<u>12-</u> <u>12</u>	<u>10-</u> <u>15</u>	<u>10-</u> <u>18</u>
Ter	101		3 a	6 a	8 ad	9 a	10 a	11	12	13	14	15	18 a	21	24	27 a	30
a	2		d	d		d	d	ad	ad	ad	ad	ad	d	ad	ad	d	ad
Gig	109	aj		3 a	5 ad	6 a	7 ad	8 a	9 a	10	11	12	15 a	18	21	24 a	27
a	3			d		d		d	d	ad	ad	ad	d	ad	ad	d	ad
Me	106	aj	aj		2 ad	3 a	4 ad	5 a	6 a	7 a	8 a	9 a	12 a	15	18	21 a	24
ga	6		3			d		d	d	d	d	d	d	ad	ad	d	ad
Myr	104	aj	aj	aj2		1 a	2 ad	3 a	4 a	5 a	6 a	7 a	10 a	13	16	19 a	22
ia	8		5			d		d	d	d	d	d	d	ad	ad	d	ad
Kilo	103	aj	aj	aj3	aj1		1 ad	2 a	3 a	4 a	5 a	6 a	9 ad	12	15	18 a	21
	9		6					d	d	d	d	d		ad	ad	d	ad
Hec	102	aj	aj	aj4	aj2	aj		1 a	2 a	3 a	4 a	5 a	8 ad	11	14	17 a	20
to	10		7			1		d	d	d	d	d		ad	ad	d	ad
Dek	101	aj	aj	aj5	aj3	aj	aj1		1 a	2 a	3 a	4 a	7 ad	10	13	16 a	19
a	11		8			2			d	d	d	d		ad	ad	d	ad
*Un	100	aj	aj	aj6	aj4	aj	aj2	aj1		1 a	2 a	3 a	6 ad	9 a	12	15 a	18
it	12		9			3				d	d	d		d	ad	d	ad
Dec	10-	aj	aj	aj7	aj5	aj	aj3	aj2	aj1		1 a	2 a	5 ad	8 a	11	14 a	17
i	1		13	10		4					d	d		d	ad	d	ad
Cen	10-	aj	aj	aj8	aj6	aj	aj4	aj3	aj2	aj1		1 a	4 ad	7 a	10	13 a	16
ti	2		14	11		5						d		d	ad	d	ad
Mill	10-	aj	aj	aj9	aj7	aj	aj5	aj4	aj3	aj2	aj1		3 ad	6 a	9 a	12 a	15
i	3		15	12		6								d	d	d	ad
Mic	10-	aj	aj	aj1	aj1	aj	aj8	aj7	aj6	aj5	aj4	aj3		3 a	6 a	9 ad	12
ro	6		18	15	2	9								d	d		ad
Nan	10-	aj	aj	aj1	aj1	aj	aj1	aj1	aj9	aj8	aj7	aj6	aj3		3 a	6 ad	9 a
o	9		21	18	5	12	1	0							d		d
Pico	10-	aj	aj	aj1	aj1	aj	aj1	aj1	aj1	aj1	aj1	aj9	aj6	aj3		3 ad	6 a
	12		24	21	8	15	4	3	2	1	0						d
Fem	10-	aj	aj	aj2	aj1	aj	aj1	aj1	aj1	aj1	aj1	aj1	aj9	aj6	aj3		3 a
to	15		27	24	1	9	7	6	5	4	3	2					d
Atto	10-	aj	aj	aj2	aj2	aj	aj2	aj1	aj1	aj1	aj1	aj1	aj1	aj9	aj6	aj3	
	18		30	27	4	2	21	0	9	8	7	6	5	2			

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* The notation "unit" represents the basic unit of measurement, such as amperes, farads, grams, hertz, meters, ohms, volts, watts, etc.

To convert from one notation (metric or a power of ten) to another, locate the original or given value in the left-hand column. Follow this line horizontally to the vertical column headed by the desired notation. The figure and arrow at the intersection of these two columns indicates the direction and number of places the decimal point is to be moved (e.g., to convert 25,000 kilohertz to megahertz, at the intersection of the horizontal column for kilo and the vertical column for mega find the figure and directional arrow |aj3. Thus, shifting the decimal in 25,000 kilohertz 3 places to the left results in the value of 25 megahertz).

THREAD SIZE/SERIES

<u>Nominal Size and Threads Per Inch</u>	<u>Thread Series</u>
0-80 OR .060-80	UNF
1-64 OR .073-64	UNC
1-72 OR .073-72	UNF
2-56 OR .086-56	UNC
2-64 OR .086-64	UNF
3-48 OR .099-48	UNC
3-56 OR .099-56	UNF
4-40 OR .112-40	UNC
4-48 OR .112-48	UNF
5-40 OR .125-40	UNC
5-44 OR .125-44	UNF
6-32 OR .138-32	UNC
6-40 OR .138-40	UNF
8-32 OR .164-32	UNC
8-36 OR .164-36	UNF
10-24 OR .190-24	UNC
10-28 OR .190-28	UNS
10-32 OR .190-32	UNF
10-36 OR .190-36	UNS
10-40 OR .190-40	UNS
10-48 OR .190-48	UNS
10-56 OR .190-56	UNS
12-24 OR .216-24	UNC
12-28 OR .216-28	UNF
12-32 OR .216-32	UNEF

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12-36 OR .216-36	UNS
12-40 OR .216-40	UNS
12-48 OR .216-48	UNS
12-56 OR .216-56	UNS
1/4-20 OR .250-20	UNC
1/4-24 OR .250-24	UNS
1/4-27 OR .250-27	UNS
1/4-28 OR .250-28	UNF
1/4-32 OR .250-32	UNEF
1/4-36 OR .250-36	UNS
1/4-40 OR .250-40	UNS
1/4-48 OR .250-48	UNS
1/4-56 OR .250-56	UNS
5/16-18 OR .3125-18	UNC
5/16-20 OR .3125-20	UN
5/16-24 OR .3125-24	UNF
5/16-27 OR .3125-27	UNS
5/16-28 OR .3125-28	UN
5/16-32 OR .3125-32	UNEF
5/16-36 OR .3125-36	UNS
5/16-40 OR .3125-40	UNS
5/16-48 OR .3125-48	UNS
3/8-16 OR .375-16	UNC
3/8-18 OR .375-18	UNS
3/8-20 OR .375-20	UN
3/8-24 OR .375-24	UNF
3/8-27 OR .375-27	UNS
3/8-28 OR .375-28	UN
3/8-32 OR .375-32	UNEF
3/8-36 OR .375-36	UNS
3/8-40 OR .375-40	UNS
.390-27	UNS
7/16-14 OR .4375-14	UNC
7/16-16 OR .4375-16	UN
7/16-18 OR .4375-18	UNS
7/16-20 OR .4375-20	UNF
7/16-24 OR .4375-24	UNS
7/16-27 OR .4375-27	UNS
7/16-28 OR .4375-28	UNEF
7/16-32 OR .4375-32	UN
7/16-36 OR .4375-36	UNS
7/16-40 OR .4375-40	UNS
1/2-12 OR .500-12	UNS
1/2-13 OR .500-13	UNC
1/2-14 OR .500-14	UNS
1/2-16 OR .500-16	UN

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1/2-18 OR .500-18	UNS
1/2-20 OR .500-20	UNF
1/2-24 OR .500-24	UNS
1/2-27 OR .500-27	UNS
1/2-28 OR .500-28	UNEF
1/2-32 OR .500-32	UN
1/2-36 OR .500-36	UNS
1/2-40 OR .500-40	UNS
9/16-12 OR .5625-12	UNC
9/16-14 OR .5625-14	UNS
9/16-16 OR .5625-16	UN
9/16-18 OR .5625-18	UNF
9/16-20 OR .5625-20	UN
9/16-24 OR .5625-24	UNEF
9/16-27 OR .5625-27	UNS
9/16-28 OR .5625-28	UN
9/16-32 OR .5625-32	UN
9/16-36 OR .5625-36	UNS
9/16-40 OR .5625-40	UNS
5/8-11 OR .625-11	UNC
5/8-12 OR .625-12	UN
5/8-14 OR .625-14	UNS
5/8-16 OR .625-16	UN
5/8-18 OR .625-18	UNF
5/8-24 OR .625-24	UNEF
5/8-27 OR .625-27	UNS
5/8-28 OR .625-28	UN
5/8-32 OR .625-32	UN
5/8-36 OR .625-36	UNS
11/16-12 OR .6875-12	UN
11/16-16 OR .6875-16	UN
11/16-20 OR .6875-20	UN
11/16-24 OR .6875-24	UNEF
11/16-28 OR .6875-28	UN
11/16-32 OR .6875-32	UN
3/4-10 OR .750-10	UNC
3/4-12 OR .750-12	UN
3/4-14 OR .750-14	UNS
3/4-16 OR .750-16	UNF
3/4-18 OR .750-18	UNS
3/4-20 OR .750-20	UNEF
3/4-24 OR .750-24	UNS
3/4-27 OR .750-27	UNS
3/4-28 OR .750-28	UN
3/4-32 OR .750-32	UN
3/4-36 OR .750-36	UNS

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3/4-40 OR .750-40	UNS
13/16-12 OR .8125-12	UN
13/16-16 OR .8125-16	UN
13/16-20 OR .8125-20	UNEF
13/16-28 OR .8125-28	UN
13/16-32 OR .8125-32	UN
7/8-9 OR .875-9	UNC
7/8-10 OR .875-10	UNS
7/8-12 OR .875-12	UN
7/8-14 OR .875-14	UNF
7/8-16 OR .875-16	UN
7/8-18 OR .875-18	UNS
7/8-20 OR .875-20	UNEF
7/8-24 OR .875-24	UNS
7/8-27 OR .875-27	UNS
7/8-28 OR .875-28	UN
7/8-32 OR .875-32	UN
7/8-36 OR .875-36	UNS
7/8-40 OR .875-40	UNS
15/16-12 OR .9375-12	UN
15/16-16 OR .9375-16	UN
15/16-20 OR .9375-20	UNEF
15/16-28 OR .9375-28	UN
15/16-32 OR .9375-32	UN
1-8 OR 1.000-8	UNC
1-10 OR 1.000-10	UNS
1-12 OR 1.000-12	UNF
1-14 OR 1.000-14	UNS
1-16 OR 1.000-16	UN
1-18 OR 1.000-18	UNS
1-20 OR 1.000-20	UNEF
1-24 OR 1.000-24	UNS
1-27 OR 1.000-27	UNS
1-28 OR 1.000-28	UN
1-32 OR 1.000-32	UN
1-36 OR 1.000-36	UNS
1-40 OR 1.000-40	UNS
1 1/16-8 OR 1.0625-8	UN
1 1/16-12 OR 1.0625-12	UN
1 1/16-16 OR 1.0625-16	UN
1 1/16-18 OR 1.0625-18	UNEF
1 1/16-20 OR 1.0625-20	UN
1 1/16-28 OR 1.0625-28	UN
1 1/8-7 OR 1.125-7	UNC
1 1/8-8 OR 1.125-8	UN
1 1/8-10 OR 1.125-10	UNS

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1 1/8-12 OR 1.125-12	UNF
1 1/8-14 OR 1.125-14	UNS
1 1/8-16 OR 1.125-16	UN
1 1/8-18 OR 1.125-18	UNEF
1 1/8-20 OR 1.125-20	UN
1 1/8-24 OR 1.125-24	UNS
1 1/8-28 OR 1.125-28	UN
1 3/16-8 OR 1.188-8	UN
1 3/16-12 OR 1.188-12	UN
1 3/16-16 OR 1.188-16	UN
1 3/16-18 OR 1.188-18	UNEF
1 3/16-20 OR 1.188-20	UN
1 3/16-28 OR 1.188-28	UN
1 1/4-7 OR 1.250-7	UNC
1 1/4-8 OR 1.250-8	UN
1 1/4-10 OR 1.250-10	UNS
1 1/4-12 OR 1.250-12	UNF
1 1/4-14 OR 1.250-14	UNS
1 1/4-16 OR 1.250-16	UN
1 1/4-18 OR 1.250-18	UNEF
1 1/4-20 OR 1.250-20	UN
1 1/4-24 OR 1.250-24	UNS
1 1/4-28 OR 1.250-28	UN
1 5/16-8 OR 1.312-8	UN
1 5/16-12 OR 1.312-12	UN
1 5/16-16 OR 1.312-16	UN
1 5/16-18 OR 1.312-18	UNEF
1 5/16-20 OR 1.312-20	UN
1 5/16-28 OR 1.312-28	UN
1 3/8-6 OR 1.375-6	UNC
1 3/8-8 OR 1.375-8	UN
1 3/8-10 OR 1.375-10	UNS
1 3/8-12 OR 1.375-12	UNF
1 3/8-14 OR 1.375-14	UNS
1 3/8-16 OR 1.375-16	UN
1 3/8-18 OR 1.375-18	UNEF
1 3/8-20 OR 1.375-20	UN
1 3/8-24 OR 1.375-24	UNS
1 3/8-28 OR 1.375-28	UN
1 7/16-6 OR 1.4375-6	UN
1 7/16-8 OR 1.438-8	UN
1 7/16-12 OR 1.438-12	UN
1 7/16-16 OR 1.438-16	UN
1 7/16-18 OR 1.438-18	UNEF
1 7/16-20 OR 1.438-20	UN
1 7/16-28 OR 1.438-28	UN

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1 1/2-6 OR 1.500-6	UNC
1 1/2-8 OR 1.500-8	UN
1 1/2-10 OR 1.500-10	UNS
1 1/2-12 OR 1.500-12	UNF
1 1/2-14 OR 1.500-14	UNS
1 1/2-16 OR 1.500-16	UN
1 1/2-18 OR 1.500-18	UNEF
1 1/2-20 OR 1.500-20	UN
1 1/2-24 OR 1.500-24	UNS
1 1/2-28 OR 1.500-28	UN
1 9/16-6 OR 1.562-6	UN
1 9/16-8 OR 1.562-8	UN
1 9/16-12 OR 1.562-12	UN
1 9/16-16 OR 1.562-16	UN
1 9/16-18 OR 1.562-18	UNEF
1 9/16-20 OR 1.562-20	UN
1 5/8-6 OR 1.625-6	UN
1 5/8-8 OR 1.625-8	UN
1 5/8-10 OR 1.625-10	UNS
1 5/8-12 OR 1.625-12	UN
1 5/8-14 OR 1.625-14	UNS
1 5/8-16 OR 1.625-16	UN
1 5/8-18 OR 1.625-18	UNEF
1 5/8-20 OR 1.625-20	UN
1 5/8-24 OR 1.625-24	UNS
1 11/16-6 OR 1.688-6	UN
1 11/16-8 OR 1.688-8	UN
1 11/16-12 OR 1.688-12	UN
1 11/16-16 OR 1.688-16	UN
1 11/16-18 OR 1.688-18	UNEF
1 11/16-20 OR 1.688-20	UN
1 3/4-5 OR 1.750-5	UNC
1 3/4-6 OR 1.750-6	UN
1 3/4-8 OR 1.750-8	UN
1 3/4-10 OR 1.750-10	UNS
1 3/4-12 OR 1.750-12	UN
1 3/4-14 OR 1.750-14	UNS
1 3/4-16 OR 1.750-16	UN
1 3/4-20 OR 1.750-20	UN
1 13/16-6 OR 1.812-6	UN
1 13/16-8 OR 1.812-8	UN
1 13/16-12 OR 1.812-12	UN
1 13/16-16 OR 1.812-16	UN
1 13/16-20 OR 1.812-20	UN
1 7/8-6 OR 1.875-6	UN
1 7/8-8 OR 1.875-8	UN

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1 7/8-10 OR 1.875-10	UNS
1 7/8-12 OR 1.875-12	UN
1 7/8-14 OR 1.875-14	UNS
1 7/8-16 OR 1.875-16	UN
1 7/8-18 OR 1.875-18	UNS
1 7/8-20 OR 1.875-20	UN
1 15/16-6 OR 1.938-6	UN
1 15/16-8 OR 1.938-8	UN
1 15/16-12 OR 1.938-12	UN
1 15/16-16 OR 1.938-16	UN
1 15/16-20 OR 1.938-20	UN
2-4 1/2 OR 2.000-4.5	UNC
2-6 OR 2.000-6	UN
2-8 OR 2.000-8	UN
2-10 OR 2.000-10	UN
2-12 OR 2.000-12	UN
2-14 OR 2.000-14	UNS
2-16 OR 2.000-16	UN
2-18 OR 2.000-18	UNS
2-20 OR 2.000-20	UN
2 1/16-16 OR 2.062-16	UNS
2 1/8-6 OR 2.125-6	UN
2 1/8-8 OR 2.125-8	UN
2 1/8-12 OR 2.125-12	UN
2 1/8-16 OR 2.125-16	UN
2 1/8-20 OR 2.125-20	UN
2 3/16-16 OR 2.188-16	UNS
2 1/4-4 1/2 OR 2.250-4.5	UNC
2 1/4-6 OR 2.250-6	UN
2 1/4-8 OR 2.250-8	UN
2 1/4-10 OR 2.250-10	UNS
2 1/4-12 OR 2.250-12	UN
2 1/4-14 OR 2.250-14	UN
2 1/4-16 OR 2.250-16	UN
2 1/4-18 OR 2.250-18	UNS
2 1/4-20 OR 2.250-20	UN
2 5/16-16 OR 2.312-16	UNS
2 3/8-6 OR 2.375-6	UN
2 3/8-8 OR 2.375-8	UN
2 3/8-12 OR 2.375-12	UN
2 3/8-16 OR 2.375-16	UN
2 3/8-20 OR 2.375-20	UN
2 7/16-16 OR 2.438-16	UNS
2 1/2-4 OR 2.500-4	UNC
2 1/2-6 OR 2.500-6	UN
2 1/2-8 OR 2.500-8	UN

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2 1/2-10 OR 2.500-10	UNS
2 1/2-12 OR 2.500-12	UN
2 1/2-14 OR 2.500-14	UNS
2 1/2-16 OR 2.500-16	UN
2 1/2-18 OR 2.500-18	UNS
2 1/2-20 OR 2.500-20	UN
2 5/8-6 OR 2.625-6	UN
2 5/8-8 OR 2.625-8	UN
2 5/8-12 OR 2.625-12	UN
2 5/8-16 OR 2.625-16	UN
2 5/8-20 OR 2.625-20	UN
2 3/4-4 OR 2.750-4	UNC
2 3/4-6 OR 2.750-6	UN
2 3/4-8 OR 2.750-8	UN
2 3/4-10 OR 2.750-10	UNS
2 3/4-12 OR 2.750-12	UN
2 3/4-14 OR 2.750-14	UNS
2 3/4-16 OR 2.750-16	UN
2 3/4-18 OR 2.750-18	UNS
2 3/4-20 OR 2.750-20	UN
2 7/8-6 OR 2.875-6	UN
2 7/8-8 OR 2.875-8	UN
2 7/8-12 OR 2.875-12	UN
2 7/8-16 OR 2.875-16	UN
2 7/8-20 OR 2.875-20	UN
3-4 OR 3.000-4	UNC
3-6 OR 3.000-6	UN
3-8 OR 3.000-8	UN
3-10 OR 3.000-10	UNS
3-12 OR 3.000-12	UN
3-14 OR 3.000-14	UNS
3-16 OR 3.000-16	UN
3-18 OR 3.000-18	UNS
3-20 OR 3.000-20	UN
3 1/8-6 OR 3.125-6	UN
3 1/8-8 OR 3.125-8	UN
3 1/8-12 OR 3.125-12	UN
3 1/8-16 OR 3.125-16	UN
3 1/4-4 OR 3.250-4	UNC
3 1/4-6 OR 3.250-6	UN
3 1/4-8 OR 3.250-8	UN
3 1/4-10 OR 3.250-10	UNS
3 1/4-12 OR 3.250-12	UN
3 1/4-14 OR 3.250-14	UNS
3 1/4-16 OR 3.250-16	UN
3 1/4-18 OR 3.250-18	UNS

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3 3/8-6 OR 3.375-6	UN
3 3/8-8 OR 3.375-8	UN
3 3/8-12 OR 3.375-12	UN
3 3/8-16 OR 3.375-16	UN
3 1/2-4 OR 3.500-4	UNC
3 1/2-6 OR 3.500-6	UN
3 1/2-8 OR 3.500-8	UN
3 1/2-10 OR 3.500-10	UNS
3 1/2-12 OR 3.500-12	UN
3 1/2-14 OR 3.500-14	UNS
3 1/2-16 OR 3.500-16	UN
3 1/2-18 OR 3.500-18	UNS
3 5/8-6 OR 3.625-6	UN
3 5/8-8 OR 3.625-8	UN
3 5/8-12 OR 3.625-12	UN
3 5/8-16 OR 3.625-16	UN
3 3/4-4 OR 3.750-4	UNC
3 3/4-6 OR 3.750-6	UN
3 3/4-8 OR 3.750-8	UN
3 3/4-10 OR 3.750-10	UNS
3 3/4-12 OR 3.750-12	UN
3 3/4-14 OR 3.750-14	UNS
3 3/4-16 OR 3.750-16	UN
3 3/4-18 OR 3.750-18	UNS
3 7/8-6 OR 3.875-6	UN
3 7/8-8 OR 3.875-8	UN
3 7/8-12 OR 3.875-12	UN
3 7/8-16 OR 3.875-16	UN
4-4 OR 4.000-4	UNC
4-6 OR 4.000-6	UN
4-8 OR 4.000-8	UN
4-10 OR 4.000-10	UNS
4-12 OR 4.000-12	UN
4-14 OR 4.000-14	UNS
4-16 OR 4.000-16	UN
4 1/8-4 OR 4.125-4	UN
4 1/8-12 OR 4.125-12	UN
4 1/8-16 OR 4.125-16	UN
4 1/4-4 OR 4.250-4	UN
4 1/4-6 OR 4.250-6	UN
4 1/4-10 OR 4.250-10	UNS
4 1/4-12 OR 4.250-12	UN
4 1/4-14 OR 4.250-14	UNS
4 1/4-16 OR 4.250-16	UN
4 3/8-6 OR 4.375-6	UN
4 3/8-12 OR 4.375-12	UN

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4 3/8-16 OR 4.375-16	UN
4 1/2-4 OR 4.500-4	UN
4 1/2-6 OR 4.500-6	UN
4 1/2-10 OR 4.500-10	UNS
4 1/2-12 OR 4.500-12	UN
4 1/2-14 OR 4.500-14	UNS
4 1/2-16 OR 4.500-16	UN
4 5/8-6 OR 4.625-6	UN
4 5/8-12 OR 4.625-12	UN
4 5/8-16 OR 4.625-16	UN
4 3/4-4 OR 4.750-4	UN
4 3/4-6 OR 4.750-6	UN
4 3/4-10 OR 4.750-10	UNS
4 3/4-12 OR 4.750-12	UN
4 3/4-14 OR 4.750-14	UNS
4 3/4-16 OR 4.750-16	UN
4 7/8-6 OR 4.875-6	UN
4 7/8-12 OR 4.875-12	UN
4 7/8-16 OR 4.875-16	UN
5-4 OR 5.000-4	UN
5-8 OR 5.000-8	UN
5-10 OR 5.000-10	UNS
5-12 OR 5.000-12	UN
5-14 OR 5.000-14	UNS
5-16 OR 5.000-16	UN
5 1/8-12 OR 5.125-12	UN
5 1/8-16 OR 5.125-16	UN
5 1/4-4 OR 5.250-4	UN
5 1/4-10 OR 5.250-10	UNS
5 1/4-12 OR 5.250-12	UN
5 1/4-14 OR 5.250-14	UNS
5 1/4-16 OR 5.250-16	UN
5 3/8-12 OR 5.375-12	UN
5 3/8-16 OR 5.375-16	UN
5 1/2-4 OR 5.500-4	UN
5 1/2-10 OR 5.500-10	UNS
5 1/2-12 OR 5.500-12	UN
5 1/2-14 OR 5.500-14	UNS
5 1/2-16 OR 5.500-16	UN
5 5/8-12 OR 5.625-12	UN
5 3/4-4 OR 5.750-4	UN
5 5/8-16 OR 5.625-16	UN
5 3/4-10 OR 5.750-10	UNS
5 3/4-12 OR 5.750-12	UN
5 3/4-14 OR 5.750-14	UNS

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5 3/4-16 OR 5.750-16	UN
5 7/8-12 OR 5.875-12	UN
5 7/8-16 OR 5.875-16	UN
6-4 OR 6.000-4	UN
6-10 OR 6.000-10	UNS
6-12 OR 6.000-12	UN
6-14 OR 6.000-14	UNS
6-16 OR 6.000-16	UN

OUNCE TO DECIMAL OF A POUND CONVERSION CHART

<u>OUNCES</u>	<u>POUNDS</u>
1	0.062
2	0.125
3	0.188
4	0.250
5	0.312
6	0.375
7	0.438
8	0.500
9	0.562
10	0.625
11	0.688
12	0.750
13	0.812
14	0.875
15	0.938
16	1.000

ISO METRIC SCREW THREAD SIZE/THREAD PITCH *

<u>SIZE IN MM</u>	<u>PITCH IN MM</u>		
<u>(BASIC MAJOR DIAMETER)</u>	<u>ISO-M</u>	<u>ISO-S</u>	
<u>COARSE</u>	<u>FINE</u>	<u>COARSE</u>	
0.25	----	----	0.075
0.3	----	----	0.08
0.35	----	----	0.09
0.4	----	----	0.1
0.45	----	----	0.1
0.5	----	----	0.125

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0.55	----	----	0.125
0.6	----	----	0.15
0.7	----	----	0.175
0.8	----	----	0.2
0.9	----	----	0.225
1.0	----	----	0.25
1.1	----	----	0.25
1.2	----	----	0.25
1.4	----	----	0.30
1.6	----	----	0.35
1.8	----	----	0.35
2.0	----	----	0.40
2.2	----	----	0.45
2.5	----	----	0.45
3.0	----	----	0.50
3.5	----	----	0.60
4.0	----	----	0.70
4.5	----	----	0.75
5.0	----	----	0.80
6.0	1.00	----	----
7.0	1.00	----	----
8.0	1.25	1.00	----
10.0	1.50	1.25	----
12.0	1.75	1.25	----
14.0	2.00	1.50	----
16.0	2.00	1.50	----
18.0	2.50	1.50	----
20.0	2.50	1.50	----
22.0	2.50	1.50	----
24.0	3.00	2.00	----
27.0	3.00	2.00	----
30.0	3.50	2.00	----
33.0	3.50	2.00	----
36.0	4.00	3.00	----
39.0	4.00	3.00	----

ISO METRIC THREADS ARE DESIGNATED BY A LETTER (M OR S), FOLLOWED BY THE SIZE AND PITCH IN MILLIMETERS, AS SHOWN BELOW. WHERE THERE IS NO INDICATION OF PITCH, THE COARSE PITCH IS IMPLIED.

EXAMPLES: M6X1 (INDICATES 6-MM DIAMETER, 1-MM PITCH); S2 (INDICATES 2-MM DIAMETER, COARSE (0.4) PITCH)

M6X1 (INDICATES 6-MM DIAMETER, 1-MM PITCH);

S2 (INDICATES 2-MM DIAMETER, COARSE (0.4) PITCH)

* Adapted from SCREW THREAD STANDARDS FOR FEDERAL SERVICES (1957), Handbook H28, Part III, Table 14.2.

ENVIRONMENTAL PROTECTION TYPES

<u>TYPES</u>	<u>REPLY</u>
Abrasive Resistant	ABRASION RESISTANT
Anti-crease	WRINKLE RESISTANT
Anti-felting	SHRINK RESISTANT
APO	FIRE RESISTANT
Aqua-sec	WATER REPELLENT
Aridex	WATER REPELLENT
Aromatic Fuel Resistant	AROMATIC HYDROCARBON
	FLUID RESISTANT
BanCare	WRINKLE RESISTANT
Bancora	SHRINK RESISTANT
Belfast	WRINKLE RESISTANT
Coneprest	WRINKLE RESISTANT
Coronized	WRINKLE RESISTANT
Cravenette	WATER REPELLENT
Crease Resistant	WRINKLE RESISTANT
Dan-Press	WRINKLE RESISTANT
Dielmoth	MOTHPROOF
Dolanize	WATER REPELLENT
Dri-Dux	WATER REPELLENT
Durable Press	WRINKLE RESISTANT
Duraseal	WATER REPELLENT
Durasec	WATER REPELLENT
Dylanized	SHRINK RESISTANT
Eulan	MOTHPROOF
Everglaze	WRINKLE RESISTANT
Fire Retardant	FIRE RESISTANT
Firegard	FIRE RESISTANT
Flamefoil	FIRE RESISTANT, MILDEW RESISTANT, WEATHER RESISTANT AND WATER RESISTANT
Flamegard	FIREPROOF
Flameproof	FIREPROOF

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<u>TYPES</u>	<u>REPLY</u>
Flame Resistant	FIRE RESISTANT
Flame Retardant	FIRE RESISTANT
Fungus Resistant	MILDEW RESISTANT
High Temperature Resistant	HEAT RESISTANT
Hydropel	WATER REPELLENT
Hydro-Pruf	WATER REPELLENT
Impregnole	WATER REPELLENT
Koratron	WRINKLE RESISTANT
Lovely On	WATER REPELLENT
Low Temperature Resistant	COLD RESISTANT
Millcrain	WATER REPELLENT
Minicare	WRINKLE RESISTANT
Moisture Resistant	WATER REPELLENT
Mold Resistant	MILDEW RESISTANT
Moth Repellent	MOTH RESISTANT
Neptone GIQ	WATER REPELLENT
Neva-Wet	WATER REPELLENT
Norane	WATER REPELLENT
Norane R	WATER REPELLENT
Penn Prest	WRINKLE RESISTANT
Perm-creased	WRINKLE RESISTANT
Permanent Press	WRINKLE RESISTANT
Perma-Pressed	WRINKLE RESISTANT
Perma-Prest	WRINKLE RESISTANT
Permex B	WATER REPELLENT
Rainproof	WATERPROOF
Rain Resistant	WATER REPELLENT
Ranopel	WATER REPELLENT
Scotch-Gard	OIL RESISTANT AND WATER REPELLENT
Scotch-Gard FC-210	WATER REPELLENT
Showerproof	WATERPROOF
Shower Resistant	WATER REPELLENT
Storm King	WATER REPELLENT
Super-Kwik-Kare	WRINKLE RESISTANT
TBL	WRINKLE RESISTANT
Tebelized	WRINKLE RESISTANT
Unidure	WRINKLE RESISTANT
Velan	WATER REPELLENT
Vitalized	CRUSH RESISTANT
Wash-and-Wear	WRINKLE RESISTANT
Water Resistant	WATER REPELLENT
Water Retardant	WATER REPELLENT
Wear Resistant	ABRASION RESISTANT

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TYPES

Wrinkl-shed
Wurlan
Zelan
Zelan RQ
Zepal B
Zepal D
Zeset

REPLY

WRINKLE RESISTANT
SHRINK RESISTANT
WATER REPELLENT
WATER REPELLENT
WATER REPELLENT
WATER REPELLENT
WRINKLE RESISTANT

FIIG Change List

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Added new reply code BDH, Adhesive, to Appendix A, Table 02.